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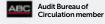
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A new chapter begins...

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WELCOME TO THE MAY 2015 issue of *Digital SLR Photography*. We're in no doubt here that this month's issue is the best we've produced in years – we hope you feel the same way too. We've quite simply got something for everyone to enjoy, learn and be inspired by this month. If you like landscapes, there's no shortage of advice and stunning photography from our homegrown team

of experts, as well as the UK's best professional photographers. We've a major guide covering the essential skills (page 72) and advice on how to shoot bluebell woods (page 30), plus a pro's insight into Snowdonia's finest viewpoints (page 23). Portrait photographers are spoilt for choice, too, with advice on using flash in poor weather (page 50), using studioflash (page 35) and creating fun triptychs (page 43). We've also incredible articles that provide very different insights into the professional world of photography: check them out on page 66 and page 94 – you won't be disappointed! We've lots of other great reads covering photo technique as well as reviews of Nikon's feature–packed D5500 entry–level DSLR, seven premium flashguns and Fujifilm's stylish X100T camera. You won't find a more inspirational 148 pages anywhere else. All the best!

Daniel Lezano Editor

0

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ON THIS MONTH'S COVER...

Reader Duncan Cubitt shot this stunning portrait for our *Photo Workshop* (see page 50) with leading portrait pro Brett Harkness. Our model Gemma was lit by a large softbox, while Brett stood behind pointing a flashgun towards the camera so that the falling rain was backlit by the flash.



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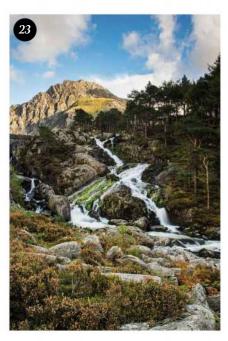








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CONTRIBUTING THIS MONTH...



Daniel Lezano

With over 30 years' experience as an enthusiast SLR photographer and 20 years on photo magazines, editor Lezano is as passionate as ever about photography, in particular portraits.



Caroline Schmidt

With many years experience working on magazines and as a professional photographer, Caroline is passionate about helping deliver an inspiring magazine each month.



Jordan Butters

With a finger always on the pulse of all things photography, Jordan turns his hand to most things: he's our social media master, features guru and talented pro photographer.



Ross Hoddinott OUTDOOR

He's not only an award-winning nature photographer, a leading expert in landscape and wildlife photography, he's a top tutor, too. www.rosshoddinott.co.uk



Brett Harkness PORTRAITS

You either want to be photographed by him or shoot like him. A master of portraits, fashion and weddings, Brett runs regular workshops in the UK. brettharknessphotography.com



Helen Dixon LANDSCAPES

Helen is living the dream, having given up a full-time job to live in Cornwall and become a professional landscape photographer. helendixonphotography.co.uk



Ray Demski ADVENTURE

A multi-award-winning action and adventure photographer with a client list that puts most to shame. Ray shares his story on page 66. www.raydemski.com



Lee Frost LANDSCAPE & TRAVEL

A long-standing regular contributor, Lee is a fountain of knowledge when it comes to shooting landscapes and delivering expert tutorials. www.leefrost.co.uk



Sacha Goldberger PORTRAITS

French commercial and portrait photographer Sacha Goldberger's latest project is sure to grab your attention and raise a smile. www.sachagoldberger.com



Rutger Pauw ACTION & SPORTS

Red Bull photographer Rutger Pauw makes the most of the solar eclipse in a one-chance only project with pro trials cyclist Danny MacAskill. www.rutgerpauw.com



Richard Hopkins TESTS

With over 30 years' experience testing cameras on photography magazines, Richard's one of the UK's leading technical experts on putting photo kit through its paces.

Portfolio

Swan Lake

by Annie Mitova

www.anniemitova.com

"I've wanted to do a *Swan Lake*-inspired shoot for a long time. I was keen to explore the idea of the black swan character; the juxtaposition between the innocence of childhood and the darker side of the black swan appealed to me. This was lit using a beauty dish and the flash's modelling light only, allowing me to capture the movement of her dance."

Nikon D7100 with AF-S 85mm f/1.4G lens. Exposure: 1/80 sec at f/1.4 (ISO 100).





Fire and Ice by Annie Mitova

www.anniemitova.com

(Above) "This is inspired by Hans Christian Andersen's The Snow Queen. I had intended to do the shoot outdoors, but for once I had nothing but sunny weather! We moved the shoot inside – my studio is small so I shot in portrait orientation and extended the image. Fake snow was used on set and extra was added during processing." $Nikon\,D7100\,with\,AF-S\,35mmf/1.4G\,lens.\,Exposure: 1/40secat\,f/1.4\,(ISO\,100).$

The Midnight Dance by Annie Mitova

(Far right) "This was inspired by the story of Cinderella. I imagined her as breaking free of a curse and transforming into a princess, without the ball and the prince! As with Swan Lake, I lit this with a beauty dish and modelling lamp to capture movement. A little composite work on the hair and dress post-capture added a painterly effect." Nikon D7100 with AF-S35mmf/1.4Glens. Exposure: 1/100 secatf/1.4 (ISO 100).

Black Swan by Annie Mitova

(Centre right) "This is a progression from the Swan Lake image on the previous page, with the girl transforming into the black swan. I composited the swan's head into her hair from an image I shot of a real swan while in Hawaii. Cracks were added to her skin and I changed her eye colour and added digital make-up too."

 $Nikon\,D7100\,with\,AF-S\,85mmf/1.4G\,lens.\,Exposure: 1/160sec\,atf/1.4\,(ISO\,100).$

The Archduchess by Annie Mitova

(Bottom right) "This represents Marie Antoinette as the Archduchess of Austria during her childhood. I wanted to show her dreamy and innocent world before she is changed by politics. UK designer Richelle Rudeen made the costume. This was also lit using a beauty dish and modelling lamp only, for a warm, painterly effect." Nikon D7100 with AF-S35mmf/1.4Glens. Exposure: 1/60 secatf/1.4 (ISO 100).









$\begin{array}{c} \textit{Corfe Castle, Dorset} \\ \textit{by Chris Button} \end{array}$

(Right) "As I climbed up West Hill, overlooking Corfe Castle, and looked back, I realised I had been lucky with the conditions - the 4am alarm call had been well worth it. I quickly found a viewpoint looking south east towards where the blanket of fog had concentrated around the castle."

Nikon D700 with a NIKKORAF-S 24-70 mm f/2.8 GED lens. Exposure: 1.3 seconds at f/13 (ISO 200).

Ibsley Common, New Forest by Chris Button

(Farright) "This shot of a lone pine tree was taken on the heather-covered plains of the New Forest in Hampshire. I was looking in the direction of the rising sun as subtle peach tones developed, which complemented the heather. A few minutes later and the dynamic range was too difficult to manage." $Nikon\,D300\,with\,a\,Tokina\,AF12-24mmf/4AT-X\,Pro\,DX\,lens.$ Exposure: 1/8 sec at f/11 (ISO 400).









Siq, Petra, Jordan by Peter Day

www.peterdayphotography.com

(Above) "The Siq is a long, narrow canyon that joins the town of Wadi Musa to the ancient ruins of Petra. A constant procession of horse-drawn carriages ferry people during the day. With my back pressed firmly against a wall, and after countless attempts, I captured this image by panning using a slow shutter speed." CanonEOS5DMkIlwithCanonEF24-105mmf/4ISUSMlens.Exposure:1/8secatf/10(ISO400).

Oia, Santorini, Greece by Peter Day

(Farright) "An iconic feature of Santorini is the white walled churches with their characteristic blue domes. After searching the narrow streets of Oia for a vantage point, I came across this view with a stairway leading down. I had to lean my tripod over a gate, but was lucky enough to get a colourful, warm sunrise." CanonEOS5DMkIlwithCanonEF17-40mmf/4LUSMlens.Exposure:0.5secondsatf/13(ISO200).

Wadi Mujib, Jordan by Peter Day

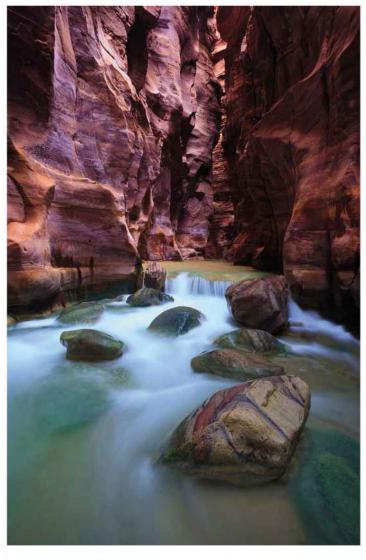
(Right) "Wadi Mujib is a canyon that flows out of the mountains into the Dead Sea. The walls close in and the water gets deeper the further you go. I settled for this section, which was waist deep – I climbed onto a rock, set up my tripod, and used a long exposure to capture the movement of the flowing water."

 $Can on EOS5D\,Mk II with Canon EF17-40 mmf/4 LUSM lens. Exposure: Four seconds at {\it f}/10 (ISO400).$

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ECLIPSE SPECIAL

A CELESTIAL ALIGNMENT, ONE OF THE WORLD'S TOP TRIALS CYCLISTS, AN EPIC LOCATION, METICULOUS PLANNING AND A LITTLE BIT OF LUCK – FIND OUT HOW RUTGER PAUW CAPTURED THIS INCREDIBLE SHOT FOR RED BULL

OR MANY OF US, the solar eclipse on 20 March 2015 involved a scurry to grab our cameras and try to figure out how to do the event justice through a mid-to-dense covering of great British cloud. However, for Red Bull photographer Rutger Pauw and Scottish trials cyclist Danny MacAskill, it marked the culmination of weeks of planning, scouting and preparation to capture a truly once-in-a-lifetime image.

The original location for this adventurous shoot was the Faroe Islands, northwest of Scotland, which was to experience the eclipse in its totality. However while scouting, Rutger and his team couldn't find the right angle to align Danny and the sun. "A week before the eclipse we decided to relocate to the Isle of Skye," Rutger tells Digital SLR Photography. "It's Danny's birthplace, which made it all the more special too. We stayed with his family and spent the week hiking up and down mountains, trying to find the right spot."





ALL OF A SUDDEN BITS OF BLUE SKY APPEARED AND EVERYBODY WENT NUTS - WE RAN UP THE MUDDY SHEEP TRAILS TO THE TOP OF THE LOCATION **

You might think that aligning a person with the sun would be fairly straightforward, but when you're shooting with an equivalent 800mm focal length (a Canon EF 400mm f/2.8L IS II USM with 2x extender) and timing the shoot to coincide with a solar event that lasts mere minutes, things get tricky. "We thought we'd found the perfect location - a dramatic backdrop and plenty of room to move to align the shot," says Rutger. "On the Tuesday we did a quick test at 9:53am and returned the next day to test again at 9:39am, the same time as the eclipse would be on the Friday, however the sun was nowhere to be seen. That's when I realised just how quickly it moves at 800mm – just 14 minutes earlier in the day and the sun wasn't above the lie of the land, let alone in the right place."

Location abandoned again, the team found another spot that worked just as well, but with Friday fast approaching and the Skye weather not granting them a chance for a test run, it was do or die come the main event. "About an hour and a half before the shoot we were sat in Danny's van; it was misty and raining hard," Rutger confesses. "We hadn't given up completely, but we had started discussing how we could use the footage that we'd shot during the build up to the shoot as we weren't expecting it to happen. All of a sudden bits of blue sky appeared and everybody went nuts! We ran



up the muddy sheep trails to the top of the location, Danny started digging a berm to give him enough run-up and I had to bury my flash into the ground to hide it from view."

Positioning himself far enough away to frame the shot presented further challenges, amplified by having to move, reframe, adjust flash power and refocus, every few moments as the sun moved across the sky. At a distance of over 300m, the team relied on radios and used PocketWizards to trigger the flash, with an assistant stood on a hill halfway between Danny and Rutger with another PocketWizard acting as a relay. Then there was nailing the exposure, as Rutger explains: "I was bound to 1/250sec so set a low ISO rating and used my aperture to control the exposure. I was at f/22 so had to set the Broncolor Move flash to

Main image) Rutger and his team also witnessed a spectacular aurora display while on the Isle of Skye. Inset above) Danny MacAskill gives the huge 400 mm f/2.8 lens and 2 x teleconverter a try, while Rutger looks on.

full-power at 1200Ws. Timing was an issue too – I was having to move across five to ten metres at a time to keep my alignment and, in the moments between signalling Danny and him reaching position, the clouds would either move in and obscure the sun or clear completely, overexposing the shot. We were very lucky in the end; I think we saw the sun twice, but we got the shot. It was very challenging and I've never been so switchedon in my life. A great team and fantastic support from Red Bull made it possible."

To find out more about Red Bull Photography, visit: www.redbullphotography.com



IMAGE OF THE MONTH Can I catch a ride?

While one lucky woodpecker escaped with its life, amateur photographer Martin Le-May captured an extraordinary viral image that went out to millions worldwide!

Out for a walk with his wife in Hornchurch Country Park, London, Martin caught the moment a woodpecker took flight with a predatory weasel hitching a ride on its back. Alerted by the squeal of the woodpecker, Martin caught the shot with his Canon EOS 70D and 300mm f/2.8L lens. With a shutter speed of 1/640sec, Martin was just about able to freeze the pair in mid-air. "The woodpecker landed in front of us and I feared the worst," said Martin. "Our presence momentarily distracted the weasel. The woodpecker seized the opportunity and flew up into the trees and away from our sight. The woodpecker left with its life; the weasel disappeared into the long grass, hungry."



Photo app







Layout from Instagram

Price: Free Platform: Currently iOS only

Following the success of Hyperlapse, we didn't think it would be long before Instagram released another standalone app. This one is called Layout and it helps you create collages on your phone.

It's not the first app to do this. If you want more comprehensive features there's the likes of PicFrame, Pic Collage, Moldiv and Split Pic, but what Layout does offer is the intuitive and slick interface that we've come to expect from Instagram.

Creating a good-looking collage is easy. Even picking your images is simple, thanks to its facial recognition giving you the option to only displaying images with people in. There's a handful of off-the-shelf collages to peruse, which you can edit by moving frames, flipping or mirroring. The finished file is then exported into a conveniently Instagram-ready square format.

We'd like more aspect ratios, as it's 1:1 only, and some border choices too, but as a simple collage maker, Layout works well. www.instagram.com

Your eclipse images









Well travelled

ARE YOU READY FOR A TASTE OF WANDERLUST? TAKE ATRIPAROUND THE WORLD WITH THE PHOTOGRAPHERS FROMTHE 2015 NATIONAL GEOGRAPHIC TRAVELLER PHOTO COMPETITION

ENGUINS STANDING ON frozen tundra, an overcrowded passenger train speeding through the forest, a cave so big you could fit an entire office block inside and a procession of young boys curiously emerging from life-like bear costumes. You don't often see a collection of images as diverse, exciting and intriguing as the winning images from this year's National Geographic Traveller photography competition.

Now in its fourth year, the contest has quickly gained momentum and attracted entries from photographers and images taken of exotic locations around the world, as well some closer to home. London-based Philip Braude took home honours in the Urban category for his image of St. Paul's Cathedral framed by Silver Birch tree.

The contest is divided into six categories: Action, Animal, People, River, Rural and Urban, with a winner picked in each and an overall winner chosen from the shortlist.

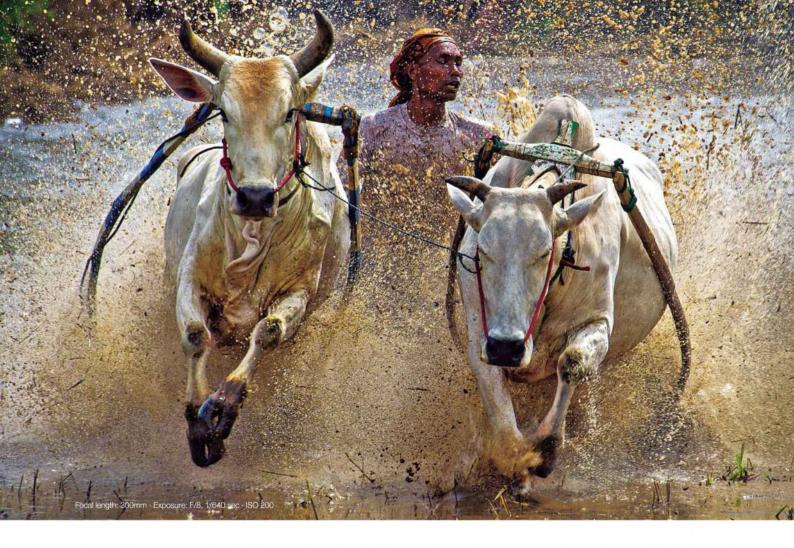
(Above right) Urban winner: Urban trees by Philip Braude "I created this image of London's Southbank to show wilderness at the heart of the city. I chose a well-known cityscape to make the image familiar, while using two flashes to highlight the natural landscape. It's set at night to bring out the brightness of the city's lights and reflections."

(Right) Riverwinner: River of ice by Claire Carter 'I travelled to Río de las Vueltas, near El Chaltén, Santa Cruz Province, Patagonia in August, which is winter in the region,and expected challenging snow and ice. However, the sun shone for much of the two-week visit, giving outstanding views of the Cerro Torre and Cerro Fitz Roy mountains. This beautiful river, with its melting waters, provided a great location for reflection shots.









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Winner of the People category, and this year's overall winner, was named as Romanian-born Alecsandra Raluca Dragoi, who lives in London. Alecsandra's intriguing image captures the Romanian New Year bear dance ritual, which sees locals perform wearing 100-year-old preserved bear furs. The award joins Alecsandra's growing list of accolades, including previous shortlisted and winning entries into the National Geographic Traveller award and the prestigious Sony World Photography Awards, and also nets her an amazing wildlife photo tour to Masai Mara National Reserve, courtesy of Tatra Photography, one of the competition's sponsors.

Other winners included Yanick Targonski in the Action category for his image taken from a Sri Lankan passenger train, Barry Robertson in the Animal category for his image of penguins on the Falkland Islands and Chris Miller for his depiction of the world's biggest cave, Son Doong, in Vietnam.

For the first time ever, the winning images are available to purchase online as high-quality prints from http://art.tt/8vs. To find out more about the *National Geographic Traveller* Photography Competition and to see the rest of the winning and shortlisted entries, visit: www.natgeotraveller.co.uk



(Above) Action winner: Train to Kandy by Yanick Targonski "Overcrowded trains in Sri Lanka often leave local travellers no other choice than standing in the open door or even hanging outside. I quickly discovered this is a photographers' dream. Capturing the image meant hanging outside the door at full speed, while not only juggling the camera with one hand, but holding as still as possible to avoid camera shake."

(Top) People and overall winner: The New Year by Alecsandra Raluca Dragoi "This image, taken in Comanesti, Romania, captures the New Year ritual dances that explore the bear tradition and its influence on people's beliefs. Even today, more bears exist in Romania's Carpathian Mountains than any other place in Europe, and this ancient rite suggests man's power to tame nature."



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LOCATION: THE SNOWDONIA NATIONAL PARK, NORTH WALES OS REF: SH 609543 (OS EXPLORER OL17 SNOWDON/YR WYDDFA)



Central Snowdonia

Snowdonia has photo opportunities to last a lifetime, with many of the best viewpoints conveniently located in a central area around the popular tourist villages of Capel Curig, Llanberis and Beddgelert. Three of the most impressive Snowdonia mountain ranges dominate this area – the Snowdon Massif, the Glyderau and the Carneddau and are all within easy reach of each other along the main arteries of the A5, A4086 and A498. Each route in itself offers fine views of the surrounding landscape, too.

The perfect starting point for any visit is the breathtaking Cwm Idwal; a short but spectacular walk from the main visitor centre at Ogwen Cottage, on the A5 North of Capel Curig. The 3,000ft peaks of the Glyderau mountains tower above the glacial waters of Llyn Idwal, so a wide-angle lens is essential here. Calm days produce amazing reflections and winter snowfalls add an alpine feel to the whole area. There are big views in all directions, with the unmistakable profile of Pen yr Ole Wen to the north and the infamous Tryfan to the east. It's a location you could easily spend the entire day photographing. Don't miss the impressive Ogwen Falls either as they tumble through rocky crags to the floor of Nant Francon valley – they're just 200m north along the A5 from the visitor's centre.

A popular Snowdonia view is from the twin lakes of Llynnau Mymbyr, next to the A4086 on the western edge of Capel Curig. The location offers easy access to one of the National Park's finest views of Snowdon; although consequently it's also one of the most photographed. Try both lakeside viewpoints: the one closest to Plas y Brenin Mountain Centre has attractive woodland, which offers more shelter so a better chance of reflections: whilst the second lake has more rugged, open surroundings and a closer vantage point to Snowdon. It's another place for incredible reflections. The peaks of the Snowdon Horseshoe look stunning in the mirror-like waters during an autumn sunrise, when the surrounding hillsides alow red in the warm light. A good range of lenses is useful here – wider focal lengths make best use of the rocky foreground on the lake edge, whilst longer focal lengths allow you to isolate the contours of the distant peaks.

Llyn Llydaw is another location for wonderful views of Snowdon and is easily reached from the large parking area at Pen-y-Pass on the A4086, at the top of the Llanberis Pass. It's a popular place with walkers though, so arrive early as the car park fills quickly. Leave the car park

- 1) CWM IDWAL PEN YR OLEWEN: The Afon Ogwen flowing towards Pen Yr Ole wen, touched by a glimpse of light. 2) LLYN LLYDAW - CRIB GOCH: The infamous Crib Goch 3) LLYN GWYNANT: Wonderful autumn light creating
- living up to its name, 'Red Comb', in the warm light of sunrise. contrasting tones on the Snowdonia peaks. 4) LLANBERIS - LLYN PADARN: A moody autumn sunrise over the Llanberis Pass, from the banks of Llyn Padarn.













Simon Kitchin: "What I love about Snowdonia"



"I moved to North Wales 18 years ago and was instantly struck by the beauty and unique contrasts of the Snowdonia National Park. It's a mix of dramatic, weather-torn peaks – most famous of all being Snowdon, Wales's highest at 1,085 metres, wonderful glacial lakes including the breathtaking Llyn Idwal, and a plethora of rivers and streams brimming with waterfalls of all shapes and sizes. Snowdonia isn't just about

mountains: there's much more to it, from stunning stretches of coastline with miles of unspoilt, sandy beaches to fascinating industrial heritage. Man's hand is evident everywhere, be it the fascinating abandoned slate quarries, now back under the influence of Mother Nature, castle ruins bearing the scars of 13th Century battles or one of the area's main claims-to-fame: its wonderful heritage railways that snake their way through valleys and mountain passes. Snowdonia truly is a diverse and inspirational place to spend time with a camera." www.landscapephotographyuk.com

Useful Information

Where is it? The Snowdonia National Park is located in North Wales, on the west coast of Britain, and covers an area of 823 square miles.

Getting there: Several road networks serve the area: the A55 from the North, the A5 from the east and the A470/A487 from the south. Once in Snowdonia the main routes (A4086, A5, A498) are excellent and, outside of the main season, relatively traffic-free – certainly compared to most major areas of the UK! Some of the more remote locations are accessed by unnamed single-track lanes, which can be impassable during winter, especially following snow. The North Wales mainline train service runs from Chester to Bangor on the coastline with good links with the Conwy Valley Line from Llandudno, which stops at Betws-y-Coed. Mainline trains are operated by Arriva Trains Wales: www.arrivatrainswales.co.uk

Places to eat and sleep:
Snowdonia is popular with
walkers and tourists, so there's plenty of
choice (visitsnowdonia.info). The main
villages; Betws-y-Coed, Llanberis,
Capel Curig and Beddgelert all have
options for food and accommodation.
The Royal Oak in Betws-y-Coed
(royaloakhotel.net) and Royal Victoria
Hotel, Llanberis (theroyalvictoria.co.uk)
are good choices. Popular with
climbers and walkers is Pete's Eats in
Llanberis (petes-eats.co.uk).

Local Camera Shop: Cambrian Photography has a good reputation and is a short drive away in Colwyn Bay. It stocks most brands and models. www.cambrianphoto.co.uk

Weather Forecast: Weather is changeable in Snowdonia so always check before venturing out. Visit: www.metoffice.gov.uk

Start Shooting

Things to shoot: Snow-capped mountains in winter, sunrise at Cwm Idwal and Llynnau Mymbyr in spring, Misty Nant Gwynant and stunning colours at Llyn Crafnant in autumn. Ogwen Falls on late summer evenings, Dinorwig slate quarry on gloomy days and The National Slate Museum in Llanberis on rainy days.

Recommended Kit: Wide-angle and telephoto lenses, tripod, ND & ND grad filters, waterproof clothing and sturdy footwear.

When to go: All year round but snow-capped mountains in winter look stunning and the autumn colours and light are spectacular.

The Location Guide

© Central Snowdonia

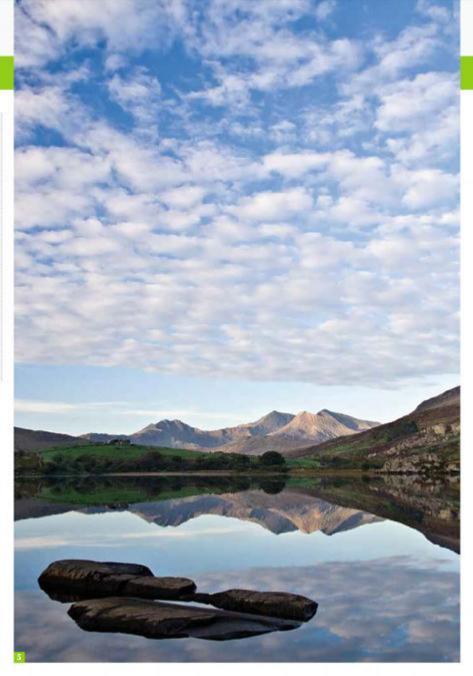
on the wide, well-surfaced Miners' Track and walk just over a mile to reach the lake, where you'll not fail to be impressed by the extensive views of Crib Goch, the towering ridges of Y Lliwedd and Crib-y-Ddysgl and, of course, Snowdon itself. It's best photographed early in the morning, because as the sun moves west, the mountains are increasingly in dark shadow. Sunrise also offers the best chance of finding the location free of visitors; at peak times it's extremely popular. A good choice of lenses is again useful here: wide-angle lenses will allow you to take in the shoreline of Llyn Llydaw and the unusual pump house; whilst telephoto lenses might capture the tiny figures making their way across the precarious route on Crib Goch, or frame a close-up shot of the old mine buildings just above the Miners' Track.

The popular village of Llanberis has the most diverse photo opportunities of any settlement in Snowdonia – head west from Pen-y-Pass through the striking scenery of the boulder strewn Llanberis Pass. The 13th





5) LLYNNAU MYMBYR: Snowdon, Wales's highest peak, looks stunning in the early morning reflections of Llynnau Mymbyr. 6) OGWEN FALLS – TRYFAN: The unmistakable peak of Tryfan towering above the cascades of Ogwen Falls.
7) LLYNLLYDAW: Asnow-capped Snowdon and Y Lliwedd, shot in early light from alongside Llyn Llydaw.
8) NANT GWYNANT: Fleeting light passing over the glacial waters of Llyn Gwynant.



Century Dolbadarn Castle sits imposingly at the entrance to the village above the southern shore of Llyn Padarn, and frames perfectly against the peak of Snowdon and the Llanberis Pass. Take the road to Padarn Country Park and park in the first car park on the left – the castle path is directly opposite.

Llanberis is also home to Dinorwig Quarry, once the second largest slate quarry in the world, where a series of visitor trails guide you through the workings, strewn with fascinating buildings and artefacts of the industrial past. The National Slate Museum sits in the old slate yard buildings and is the perfect place to escape from a rainy day. The old workshops, sheds, quarrymen's houses and foundry are crammed full of old equipment and machinery; terrific stuff for detail shots, but take a fast lens as light levels inside are quite low

For train buffs, Llanberis offers two options, as the main station of the Snowdon Mountain Railway is right in the village centre and the line climbs to the summit of Snowdon. Alongside Llyn Padarn, steam trains also run along the narrow gauge Llanberis Lake Railway. For many photographers though, the main attraction

is the amazing sunrise views of Snowdon and the Llanberis Pass that can be shot from the lakeside. There are two excellent views; the first at Brynrefail, at the north end of the lake. Shoot from the low bank to the left of the lake outflow. The second viewpoint is halfway along the western edge of the lake – turn right onto Ystad Ddiwydiannol Y Glyn at the north end of the village.

The final must-see location is the glacial lake of Llyn Gwynant, resting in the valley of Nant Gwynant. It's best approached from Capel Curig – leave the A4086 to follow the A498 on its descent into the valley. There are two viewpoints high above the lake: the small car park looking directly across to the Snowdon Horseshoe with good but limited views of Llyn Gwynant, and a large roadside layby just over one mile further down offers fantastic aerial views. The lake itself is surrounded by mountains on all sides and its sheltered position means there's a good chance of calm water and stunning reflections. It's also one of the best places in Snowdonia for shots of swirling autumn mists, which linger above the valley floor. Shoot from the higher viewpoints with a long lens for images crammed with atmosphere.



Keep shooting! Other great locations near Snowdonia



1) CAERNARFON CASTLE

One of the finest castles in the UK, on the edge of the Snowdonia National Park, in the popular town of Caernarfon on the Menai Straits. Shoot using a wide-angle lens across the harbour with its picturesque flotilla of boats or wander around the fascinating interior for detail shots.



2) LLYN CRAFNANT

Llyn Crafnant is just a short drive from Betws-y-Coed and a favourite location in Snowdonia for autumn colours. Arrive nice and early on a calm day in late October for the chance of crisp reflections and atmospheric mists swirling above the still water.



3) DINAS DINLLE

A vast sandy beach on the northern coast of the Llyn Peninsula, just a short drive from Snowdonia. There are wonderful views south to the mountain of Yr Eifl (The Rivals) and incredible sunsets all year round. It's the ideal location for long-exposure coastal shots, too.





SIGMA 10-20^{mm} F4-5.6 EX DC HSM

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The ultra-wide-angle capabilities of this Sigma lens open up new possibilities to digital photographers.

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p30 BLUEBELLS: HOW TO SHOOT BLANKETS OF BLUEBELLS THIS SPRING



p35 PORTRAIT: USE CLAMSHELL LIGHTING FOR DRAMATIC PORTRAITS



p38 MOON PHOTOGRAPHY: CAPTURE YOUR OWN CELESTIAL IMAGE



p46 CREATE THE TRIPTYCH: HOW TO BUILD YOUR CREATIVE PORTRAITS









TIME YOUR VISIT Bluebells flower in early spring and last through to early summer, but they're usually past their best by mid-spring, so don't miss your chance! Keep your eye out for early displays and time your visit to coincide with blooms in full blossom. Bluebells look fantastic when backlit by low golden sun, so arrive in plenty of time, and look for an even coverage of flowers near the edge of woodland.



2 MIND YOUR STEP When assessing compositions and setting up your camera, be careful not to damage any flowers. Walk around the edges of the bluebells and only set up once you've identified a good view. I've opted to shoot towards the sun to highlight the flowers and make the most of the long shadows cast by the surrounding trees. A tripod will help you bag sharp shots in darker woodland.





EXPLORE THE OPTIONS Camera height and focal length make a big difference. If the flora is sparse, a lower height will make it appear denser. Lens choice affects the look of the image greatly – a wideangle will take in a larger scene, but may distort the trees, whereas a telephoto lens will compress perspective, making the flora appear thicker. Try different lenses and heights to find an effect you like.



TAKE THE SHOT I've opted to shoot with a wide-angle lens. Select aperture-priority mode and pick a low ISO and an aperture between f/8 and f/13 – this should provide sufficient depth-of-field. Focus a third of the way into the scene, take a shot and check the histogram – you may need to add exposure compensation when shooting toward the sun, but watch for clipped highlights.

COMMON PROBLEMS AND HOW TO TACKLE THEM



1) Dynamic range In dense woodland there can be several stops difference between light and shadows. Keep an eye on the histogram to avoid clipping the highlights – often shadow detail can be recovered during processing. Alternatively, bracket exposures and blend them in processing.



2) Flare It can be problematic when shooting towards the light, no matter how good your optics. Remove filters as these magnify the problem and look to block the sun using a tree. An alternative trick is to take one exposure with your thumb blocking the sun and use this image to clone out flares.



3) Messy foliage Fallen branches, broken twigs and rubbish can spoil your shot. Finding a clean composition isn't always possible, so a spot of light 'gardening' may be needed. Tread gingerly, watching you don't flatten any foliage, and carefully remove any distractions from the scene.



sev5n

■ micro filter system

The back streets of any city also provide great subjects for urban scenes. This side alley required a three stop grad filter to avoid the sky being washed out. It was then a matter of timing, waiting for a passing bus to add a splash of colour.



Architecture, movement, colour and drama. This scene has it all and needed two filters to capture it successfully.

Firstly, a polariser boosted the colours and controlled the direction of the reflections. Then a three stop soft grad balanced the bright sky to avoid burn out.



Polariser & 0.9 ND soft grad

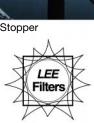
0.9 ND soft grad

British skyscrapers may not be as tall as those in the rest of the world, but they still impress. A long exposure adds interest in the sky and the water that surrounds them and whilst the blue cast of the filter is easily correctable, here it actually adds a pleasing cool hue.





0.9 ND soft grad & Big Stopper



The Seven5 System embodies all that I love about the larger LEE 100mm System, but in a convenient compact size. I can carry all my gear and filters in a small bag, perfect for shooting in an urban environment.



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LAMSHELL LIGHTING is instantly identifiable by its controlled, defined shadows and glow that can be beautifully flattering and contour-defining. Commonly it's created using two lights: one above and one below, equal distance from the subject, with the photographer shooting in between. Although the lighting technique seems quite straightforward, there are many variations for different effects depending on your lighting combinations. You can use just about any studioflash modifiers but beauty dishes and softboxes or striplights are favourites, but with differing effects. A beauty dish offers crisper definition than a softbox's light, which wraps around the face. If you've only got one studioflash, such as in this tutorial, you can use a reflector or white fill card underneath to fill in the shadows on the lower half of the face, but the degree of fill won't be as much as it would with a second studioflash. The technique depends on the precise positioning of the light sources and balance of light. Have the lights too uneven in strength and you could end up giving your subject a five o'clock shadow; have them too strong or at the wrong angle and the lighting can be too flat. If you're using two lights, set the power of the top light stronger than the bottom to ensure the light is flattering and defining. As you're adjusting the light, watch out for shadows underneath the neck and nose and ensure the catchlights are attractive; ideally at the top and bottom of the eyes.

1) SETTINGS: Set your camera to its flash sync speed and dial in an aperture for sufficient depth-of-field – for this shoot I used f/11 - f/13 and a low ISO to maximise image quality.





2) LIGHTING SET-UP: I set up a softbox approximately 2ft away, facing my subject, Erin, slightly above eye level and angled down 45°. The angle of the top light is really important for bouncing the light off the angled reflector underneath and onto the subject's face. The reflector was positioned at chest height, supported by Erin. If you're using one studioflash and a reflector too, consider moving your top light closer to the subject and varying the distance of the reflector under the subject until you're happy with the level of fill.

COMMON PROBLEMS WITH CLAMSHELL LIGHTING



• FLAT LIGHTING: If the light looks too flat for your taste, raise the height of your top light to deepen the shadows. If that still doesn't work, move the reflector further away to reduce the fill or feather the light by changing its angle.



DEEP SHADOWS: The subject-to-light distance are especially important with clamshell lighting. The best effects come from 2-3ft away. If the light is too far away, your reflector will lose its power and the light on the face will look unbalanced.



LIGHT IS TOO CLOSE: By placing the studioflash less than 2ft away from Erin and at an acute angle, instead of 45°, the flash illuminates the top of her head rather than her face, creating dense shadows around the eyes and lower face.







SHOOT FOR THE MOON

POINT YOUR CAMERA TOWARDS THE NIGHT SKY AND RECORD SHOTS WITH STUNNING LUNAR DETAIL. JORDAN BUTTERS SHOWS YOU HOW IT'S DONE...

CAMERA: CANON EOS 550D / LENS: SIGMA 50-500MM F/4-6.3 EX DG HSM

PHOTO SKILLS

AN HAS LONG been fascinated by the moon and the effect that is has on our planet, so it's only natural that we want to point our lenses skyward to capture it. Despite it being some distance away, around 240,000 miles in fact, there's a surprising amount of detail visible to the naked eye too – huge lunar plains, ecological formations and impact craters – and even more when viewed through a telezoom lens!

As well as a digital SLR, you will need a lens with substantial reach in order to fill the frame

with the moon. I've used Sigma's excellent 50-500mm f/4-6.3 EX DG HSM on an APS-C sensor, giving me an equivalent focal length of up to 800mm. This lens can be hired for a relatively low cost, or alternatively try a 1.4x or 2x teleconverter on a 70-200mm lens to obtain a not-too-dissimilar reach. Furthermore, if your camera has a high megapixel count (18-megapixels or higher), you can always crop in to the shot during post-processing and still come out with a reasonably high resolution image.



PLAN AHEAD Arrange your shoot to coincide with the right conditions. Use a lunar calendar, like moonconnection.com, to check which lunar phase the moon is in and keep an eye on the weather forecast for a clear night. I've opted to photograph the moon during a waxing gibbous lunar phase (in between full and quarter moon), as the shadow side of the moon adds depth and texture. You could always shoot on multiple nights to document the different phases.



NO APOLLO-GIES, I'M A LUNAR-TIC Getting your focusing spot on is the secret to delivering tack-sharp lunar shots with plenty of detail. Give it a try!

Exposure: 1/100sec at f/10 (ISO 100)



DIAL IN THE SETTINGS Set up your camera on a sturdy tripod and position your lens towards the moon – for optimum sharpness place the moon in the centre of the frame. As the moon is effectively reflecting sunlight, a long exposure isn't required. Select manual mode and choose a shutter speed between 1/100sec and 1/200sec and an aperture of around f/10 and ISO 100. The aim is to ensure that we retain detail in the moon's surface by underexposing it slightly.



FOCUS CAREFULLY Use LiveView and zoom into the LCD while manually focusing to ensure a sharp image. All the while the moon will be moving across the sky, so you may need to recompose the image before shooting. Attach a remote release, or use your camera's two-second self-timer mode to trigger the shutter – at long focal lengths camera shake can be a serious problem. You can also use your camera's Mirror Lock-Up feature, if it has one, to stop further vibrations.



PROCESSING With your images imported into Photoshop, Elements or Lightroom a little processing is needed to bring the best out of the image. Start by adding contrast using the Contrast slider or the Tone Curve while keeping an eye on the histogram to make sure that the highlights aren't clipped. Increase the Clarity to bring out the moon's texture further before sharpening to ensure crisp detail. I've also cropped in slightly to show the moon bigger in the frame.



FANCY A CHALLENGE? HERE ARE SOME ALTERNATIVE LUNAR IDEAS TO TRY



1) Seek out a silhouette
Find an interesting shape to place
between yourself and the moon – birds
on branches can work well, or if your
reactions and timing are good enough
you might even catch one in flight!



2) Include air traffic Shoot a scene with passing air traffic included to show scale. This is only possible if you shoot early enough in the evening. Leave it too late and it'll be too dark to record any aeroplanes.



3) Superimpose the moon
You can easily superimpose your moon
shot onto any night scene using the
Lighten Blend Mode in Photoshop.
Make sure that the exposure of the
scene and moon line up, orit'll look fake.



4) Capture a time-lapse
Perfect for recording a lunar eclipse.
Zoom out to leave room in the frame and use an intervalometer to trigger your camera every few minutes. The results can be compiled into one image.





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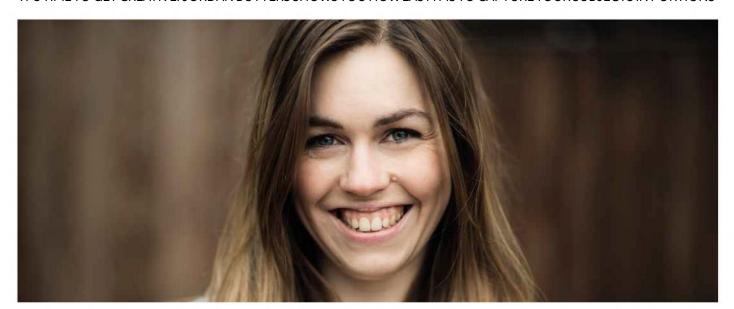
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FUN TRIPTYCH PORTRAIT

IT'S TIME TO GET CREATIVE! JORDAN BUTTERS SHOWS YOU HOW EASY IT IS TO CAPTURE YOUR SUBJECTS IN PORTIONS









VER FEEL LIKE you're in bits and pieces? Here's a quirky and creative portrait technique that uses that feeling figuratively! By shooting three individual images of someone's head, torso and feet, before stitching them back together in a triptych, you can create a zany stylised portrait that can't fail to raise a smile.

The popularity of this technique can be credited, in part, to street photographer Adde Adesokan, whose series *Triptychs of Strangers* gained viral success online. Adde used this technique with fantastic and inspiring results and has put together a collection of triptych portraits on Flickr. Check out his take on the idea for yourself, here: http://bit.do/DSLR-adde.

The trick when shooting your own triptych portrait is not to aim for the three images to line up – quite the opposite in fact! Between shooting each segment move in closer, or step further away – you could even switch focal lengths for exaggeration. This creates a disjointed effect that adds to the overall appearance of the final image.

Kit-wise, it's best to keep it simple: natural lighting and your DSLR or mirrorless camera along with a fast prime lens are perfect for the job. I would recommend a 50mm or 85mm f/1.4 or f/1.8 lens, but your kit zoom is fine too. You might want to consider using a reflector if a bit of extra fill is needed, but your best bet is to shoot when the light is diffused by cloud, or in open shade.

TIPS FOR KIDS

This technique works great for capturing fun images of children and toddlers, too, but be prepared – the child probably won't be as interested in the idea as you are!

Capturing the headshot is the trickiest part, particularly if they refuse to stand still! But once that's done the torso shot can be easily achieved by asking the parent to give the child something to hold and distract them. The feet shot can even be done with the parent holding the child in place from the side—shhh, no-one will ever know!





IFIND A SUITABLE LOCATION As you're shooting a series of images that will sit next to one another in the final result, the lighting and conditions need to remain consistent. Therefore, look for an area of open shade where the light is soft and diffused. Pay attention to the background – it should be clear and free of distractions. Put distance between your subject and the backdrop to help blur it out of focus.



ESTABLISH YOUR EXPOSURE Select aperture-priority mode and pick a wide aperture. Choose spot metering and an ISO that gives you a workable shutter speed – ideally faster than 1/100sec. Focus on your subject's eyes and take a test shot. Assess the exposure using the LCD and if you're happy then transfer the settings over into manual mode – this will ensure that the exposure remains consistent for each image.

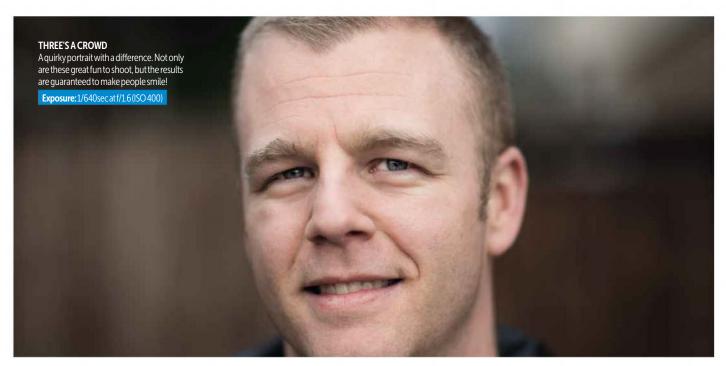


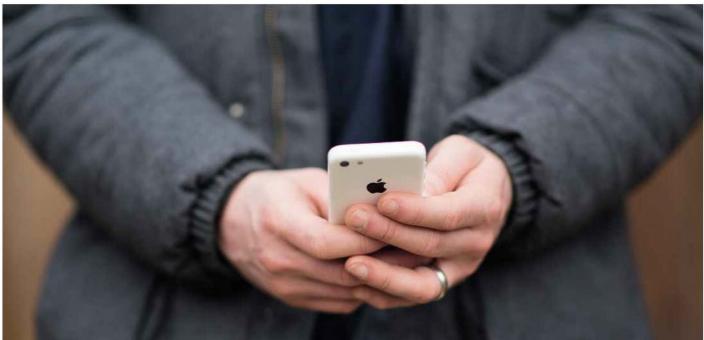


3 SHOOTTHE HEADSHOT (above) Capture the headshots first as these are arguably the most important and will take the most time. Use a central composition in landscape orientation and look to fill about a third of the frame with your subject's head. Shoot a variety of different looks – from straight faces to smiles to goofy expressions. Also try shooting some closer and further away too – this way you have plenty of choice when it comes to putting together your triptych.

CAPTURE THE HANDS & FEET (right) Give your subject something to do with their hands – they could play with their phone or twiddle their thumbs, for example. An alternative idea is to let them hold something that represents their job, hobby or personality. When it comes to capturing their feet, don't shoot them straight-on – get down low and ask your subject to angle or lift their feet slightly to give them shape.











Create your triptych

WITH YOUR IMAGES CAPTURED IT'S TIME TO PIECE TOGETHER YOUR TRIPTYCH PORTRAIT IN PHOTOSHOP









MATCH IMAGE SIZES You can skip this step if all of your images are already the same size – I had cropped my Raw files slightly, so all three were different. Check the size of each image by going to Image>Image Size. Make a note of the shortest width from all three and use the same Image Size menu to make the other two images the same width.



MATCH IMAGE RATIOS Next, select the *Crop* tool and, in the top menu bar, select *Ratio*. In the input boxes to the right, input the image ratio that you want to use – the first box is width, the second is height. I chose 2:1 for my images. Click on your image, line the crop up and press *Enter*. Crop all three images using this same ratio.



COMBINE IMAGES On your torso image, double-click on the *Background* in the Layers palette and click *OK* to unlock the layer. Move over to your feet image – go to *Select>All* and then *Edit>Copy*. Head back to your torso image and go to *Edit>Paste* to paste the feet as a new layer. Repeat for your head image – pasting it onto the torso file.



MOVE POSITIONS Make sure that Snap is turned on by going to View>Snap. Then, activate your head layer in the Layers palette and select the Move tool. Holding down the Shift key, drag the layer upwards until it disappears off the top of the frame. The bottom edge of the head layer should snap together with the top edge of the torso layer.



REVEAL ALL Repeat this process for the feet layer, holding *Shift* and dragging down until the top edge of the feet layer snaps with the bottom edge of the torso layer. Then, go to *Image>Reveal All* and all three layers will appear, lined up. You might choose to stop here, but I want to add a border between my three images...



ADD SPACING With the Move tool still selected, and your feet layer active, hold down the Shift key and tap the Down arrow key to create a gap, counting how many times you tapped – each tap is 5 pixels wide. Make your head layer active and repeat this, tapping the Up arrow key the same number of times. Go to Image>Reveal All again.



ADD A BORDER To add a border, select the Crop tool and then press the Esc key. In the top menu bar, press Clear and then click on your image. Use the corners to extend the canvas before pressing Enter. Then, go to Layer>New Fill Layer>Solid Color and press OK. Pick your border colour and then, in the Layers palette, drag this layer to the bottom.







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Profoto present a new system of compact off-camera flashes and Light Shaping Tools, designed for fast and easy on-location photography

The most attention-grabbing item in the Off-Camera Flash system is the new B2. The B2 is a lighter, more portable counterpart to the B1. The B2 consists of a battery pack and a head. The battery pack can be put on the shoulder or hip, while the head is small and light enough to be mounted onto a monopod or a bracket on the camera. This will allow the photographer to stay moving. If that is not necessary, both the pack and head can be put on a stand and the B2 can be wirelessly controlled from the camera. This makes the B2 the world's first off-camera flash that can be used both on and off-camera.

In addition, the B2 has all the benefits that made the B1 an outstanding success. It has TTL. It has HSS. It is fast enough to keep up with your camera and five times as powerful as the average speedlight. It can be used with the entire range of Profoto Light Shaping Tools. All this in a head with the same size and weight as a speedlight.

The Profoto Off-Camera Flash system also includes the new OCF Light Shaping Tools. The OCF Light Shaping Tools are smaller and more lightweight. They also consist of fewer parts and use smart, patent-pending solutions that make them fast and easy to mount and use. The assortment includes four new Softboxes, a new Grid Kit, a new Snoot and a new Barndoor.





The Photo Workshop

OUTDOOR PORTRAITS

EACH MONTH WE GIVE ONE READER THE CHANCE TO TEAM UP WITH A LEADING PROFESSIONAL FOR AN EXCLUSIVE ONE-TO-ONE PHOTO WORKSHOP. THIS MONTH, PRO PHOTOGRAPHER BRETT HARKNESS AND READER DUNCAN CUBITT TACKLE SHOOTING STRIKING PORTRAITS OUTDOORS ON A DIM, RAINY DAY, USING A MIXTURE OF AMBIENT AND FLASH LIGHTING

THE EXPERT: Brett Harkness



Leading professional photographer Brett Harkness is one of the UK's best wedding and portrait photographers, and regularly conducts workshops. brettharknessphotography.com

Brett's kit: Canon EOS-1Ds Mk III, Canon EF 50mm f/1.2L lens, Elinchrom Quadra lighting, Flash Wizard triggers and Lastolite reflectors.

NOWING HOW BEST to use flash with daylight is an essential skill for portrait photographers to master. Being able to control the ratio of flash to ambient light opens up all sorts of creative possibilities, as well as allowing you to capture shots in conditions where ambient light alone isn't sufficient.

In this month's workshop, top portrait pro Brett Harkness, reader Duncan Cubitt and model Gemma Louise Clarke have planned to capture stunning location portraits in Duncan's picturesque home town of Stamford, Lincs.

One thing you quickly learn as a photographer in the UK is that you can never accurately predict the weather. The point was proven on the day of

THE PUPIL: Duncan Cubitt



A retired professional editorial photographer with more than 40 years experience mainly shooting aviation, motor sports and action photography on film, this is Duncan's first portrait shoot

with a professional model in a number of years.

Duncan's kit: Canon EOS 5D Mk II with a Canon EF100mm f/2 USM lens.

our workshop, which the 48-hour Met Office forecast had described as mild and overcast. In fact, a more accurate description would be cold, miserable and thoroughly wet.

However, the poor conditions didn't put off Brett, who's a seasoned hand at handling portrait and wedding shoots in bad weather, nor Duncan, a retired pro who has shot everything from motor sports to aviation (including air-to-air) over a 40-year career. Both looked at the constant downpour as an additional challenge to what had originally been planned as a more straightforward outdoor portrait workshop. As we'll see, they didn't let it get in the way of capturing great images either.



CHALLENGE 1: MANIPULATING DAYLIGHT

"The chance to shoot great portraits in poor weather is one I regularly tell attendees of my workshops to try. If you're going to develop as a portrait photographer, then you need to learn how to handle all types of weather, both in terms of photo technique but also what locations to use. Whenever possible, start your shoot by using ambient light only, so you can see exactly what kind of results are possible without flash.

"As it's raining, we need an outdoor location that offers both cover and good light. Fortunately, Duncan knows of an old priory a short distance away that offers an open front with cover, perfect for our needs.

"Duncan is very experienced so I knew he'd be clear on all of the basics, but when teaching on a one-to-one workshop, I always prefer to cover all bases. We start off by using only ambient light, purely to begin the shoot using a flatter light source - we'll then follow on by repositioning the model to give more of a side light and to introduce shadow. These simple set-ups are just to explain how ambient light can be used in different ways, such as bouncing it off a wall, not bouncing any light, using a reflector and so on. It's also important in terms of showing how to expose skin tones correctly - my preferred method in side-lit situations is to expose for the side the light comes from. Exposing for the side with the highlights also has the effect of darkening shadows.

"My standard camera settings when working with ambient light is to set AF to centre-point focus, along with centre-weighted metering and the exposure compensation facility. I sometimes switch to multi-zone metering but I rarely use spot as an alternative as I find the small area it covers far too specific. Ultimately, whichever metering pattern I use, it's the manual shifts that I make using exposure compensation that gives the results that I want.

1) Brett explains how the direction of light is key to where the model is positioned to control highlights and shadows.

"Duncan easily puts these principles into practice and after a test shot or two, he's quickly taking excellent portraits. He's not worked with a professional model for a portrait shoot like this before, but that doesn't show. He is confident, knows what he wants and has a friendly approach to directing Gemma, which means she's relaxed and knows exactly the types of poses and expressions Duncan is looking for. Most of the earlier shots have Gemma standing away from the wall to receive as much of the ambient light as possible. By changing her position and introducing a reflector, we're able to play with the light to add or remove shadows. After a few shots, I ask Gemma to stand in front of the wall so that Duncan can change his background and also reduce the light by mostly using the light reflected from the wall. By then having Duncan stand against the wall, and shifting Gemma's position, we can create more depth by having the wall fall away in the distance."

263) Duncan starts off by capturing decent portraits that

4&5) Moving Gemma's position so she's against the wall

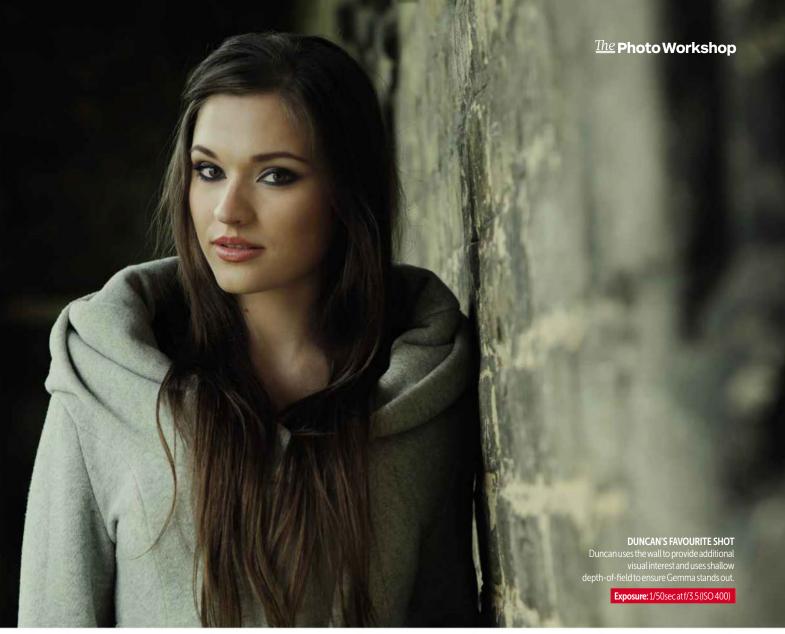
provides a soft light that lacks the shape given by side lighting.

make the most of soft sidelighting to good effect.



CHALLENGE 1 Pro verdict

"Duncan's experience is very evident from the start of the shoot as he applies all the basic skills for daylight portraits with ease. His naturally exuberant nature also plays its part in helping him build a good connection with Gemma. It will be interesting to see how he handles incorporating flash into his portraits."



44 WHENEVER POSSIBLE, YOU SHOULD START YOUR SHOOT BY USING AMBIENT LIGHT ONLY, SO YOU CAN SEE EXACTLY WHAT KIND OF RESULTS ARE POSSIBLE WITHOUT FLASH ***





"When portrait shoots are progressing smoothly, I always like to try out alternative compositions using the camera to capture images in landscape as well as portrait format. As our location has several thick pillars, I want to create a composition where a pillar dominates the foreground. This kind of image is quite hard to do when the scene is lit with bright sunlight, the pillar will be far brighter than the subject and will draw the viewer's attention. Therefore this style of image is well suited to when the light is flat, as it was here. If I'd been shooting on a bright day, the subject would be much darker, so I'd get around this problem by using flash to light my subject and even up the overall exposure in the scene."





CHALLENGE 2: FLASH & DAYLIGHT

"Using flash rather than ambient light gives you far more control over how your subject is lit – everywhere effectively becomes a studio once you have flash available. Flash is suitable in all conditions – while its use on dim, dark days like today is obvious, it's also ideal on bright sunny days, too. Once you start to use flash, the improvement in lighting is noticeable – especially in the eyes. Reflected ambient light is only good to a point when it comes to giving life to the eyes – using flash takes it to another level. As well as providing a far more controllable light, it's cleaner too, giving far more definition to images.

"Duncan has used flash before, but I thought it best to explain the areas I always cover with workshop attendees. One of the important things to ensure when using flash in ambient conditions is to make the scene look as natural as possible. The golden rule is to aim the flash so it illuminates the scene in the same direction as the ambient light. We also need to decide on the size of the flash modifier depending on the results we want, as the size determines the softness of the output and how we control how the light wraps around the face. The other thing I always try to introduce into my flash-lit portraits is a point of origin for the flash; I want the viewer to imagine where the light is coming from, it could be from a street lamp or through a window. Finally, with flash, I prefer to use the camera in manual mode as it allows me to make quick adjustments to the levels of the flash and ambient light.

"When you're combining flash with daylight, you want to be careful that you are not too extreme with your exposure settings. If you use too wide an aperture or too slow a shutter speed, you'll effectively be lighting your subject with ambient light and adding little or nothing with the flash. A quick and easy way to check this is to take a test shot with the flash or trigger switched off, that way you can see how the scene is lit



by ambient light. Then switch it back and take another shot and you'll be able to compare the difference and adjust the flash power to suit. In this case we wanted minimal ambient lighting, so the test shot should show Gemma appearing almost silhouetted against the backdrop – thus confirming that she will be illuminated purely by the flash.

"Duncan picks up this information and applies it well. He places Gemma in a similar position to the previous shots, but this time places a flash head to her right. I'd explained that with large softboxes, I always think it is best to have it high and angled as it gives a nice spread of light. I was glad to note that Duncan had remembered this and angles the Octabank at a good height and places it to the same side as the ambient light reaching the subject. The initial shots were very good, but not perfect.

"The problem shooting in a dark location like this is that it's easy to lose the subject against a dark background because we're effectively underexposing the backdrop. An easy way round this is to introduce a second light to add some separation. I like to aim



 The first set-up involves the use of a large Elinchrom softbox positioned to Gemma's right.
 30 Duncan fires off a test shot with the trigger off to determine ambient light, then with it on to fire the flash.
 A second flashgun is set up behind Gemma and angled towards the camera to add extra light and a touch of flare.

this secondary light slightly towards the camera so to introduce a touch of flare into the image – it's a subjective effect that some like while others don't, but I think it adds an extra visual element into the image. Duncan provided the solution by placing a flashgun on a stand high behind Gemma's left shoulder and aimed towards the camera, producing an image with separation and a nice flare effect."

CHALLENGE 2 Pro verdict

"Duncan proved to be a quick learner and had little problem understanding how I use flash, even though his way of working with film and flash contrast greatly. Again, he clearly instructed Gemma and worked efficiently to deliver some great portrait images."







"Now that Duncan has a good grasp of using flash with daylight, I decide it would be good with the short time we had left to try out two or three creative flash techniques. I explain the idea behind each to Duncan and he admitted he hadn't tried any of them before, so it would be interesting to see how well he manages them.

"The first one we try is high-speed sync. This technique involves using a shutter speed that is faster than the camera's standard flash sync speed (usually around 1/125sec to 1/320sec). You can do this using dedicated leads, high-speed triggers or the high-speed mode if your flash has one.

"With conventional flash photography, the limits imposed by the flash sync speed mean you make exposure adjustments by changing the aperture. By using high-speed flash, you can use the shutter speed to control everything; you can set the aperture that you want and the shutter speed takes care of the exposure. By changing the shutter speed, you can effectively increase or decrease the amount of flash reaching your subject. This means you can use a very wide aperture to capture flash portraits with a shallow depth-of-field. High-speed flash can be harsh so a modifier is recommended - a softbox or honeycomb is a good choice.

"Duncan decides to use the latter, which gives a nice, specular light and, after setting

182) Duncan's high speed flash image works well – by setting a wide aperture and using a fast shutter speed, he's able to blur the branches in the backdrop behind Gemma.

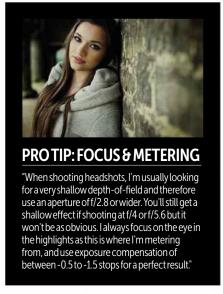
a wide aperture of f/3.5 to throw the trees behind Gemma out of focus, he adjusts the shutter speed until the flash gives the

"I sometimes like to experiment with coloured flash gels at the end of a shoot. While it's a fairly basic technique to do, it's good fun and adds extra visual interest to a scene. Often, I'll use gels - in particular orange/CTO gels - to mimic the light that's coming from a street lamp. I tasked Duncan to capture a flash exposure with a secondary flash fitted with a gel to provide some extra











THOUGHT HE SHOULD TRY AN OLD FLASH FAVOURITE AND SEE IF HE COULD CAPTURE A PORTRAIT WITH BACKLIT RAIN ***

mood and warmth to the scene. You have to be careful with gels as if the flash is too weak, the effect looks awful; while if too strong, the colour cast can be overpowering and ruin the image. The perfect balance is when the gel's colour adds a visual impact that's pleasing to the eye without being distracting. With Gemma positioned at the end of the priory in front of an iron gate, Duncan set up the main flash with a softbox attached and worked out the correct exposure for the scene. He then had me hold a flashgun fitted with an orange gel a little distance behind the gate. After a small number of test exposures, he had the balance right and captured a nice portrait with warmth added by the gel.

"Duncan was learning and working fast so I thought he should try an old flash favourite and see if he could capture a portrait with backlit rain. I explain that he should light Gemma with the Octabank and use a

second flash low and behind her to illuminate the falling rain, rendering it as bright bokeh. Duncan placed the softbox about 2-3ft away from Gemma's right, throwing light on to her face. I crouched down about 10ft behind Gemma handholding a flashgun fitted with a trigger and aimed it at her. I adjusted the power according to Duncan's test shots, with one-quarter power being the best setting. As before, he set an exposure where ambient light alone would have recorded her as a very dark silhouette. Duncan asked if the shutter speed should capture the rain as streaks or frozen drops but I advised him not to worry as both looked good.

"One problem with this technique is that the light from the rear flashgun will also produce strong highlights around her hair, so we need to keep an eye on that. The solution was easy – we asked Gemma to raise her hood."



162) This technique involves firing test shots to balance the flash outputs. It's a shame Duncan mastered this skill so quickly – we enjoyed seeing Brett getting soaked in the rain!

CHALLENGE 3 Pro verdict

"Creative flash techniques are great to try and it was clear Duncan had fun trying them out. He did a good job using the orange flash gels and captured a great result. The backlit rain shot can be tricky to do, but I have to say Duncan did a terrific job and mastered it very quickly. Overall, Duncan really got to grips with some advanced flash work and got great images."

WORKSHOPSUMMARY: Duncan Cubitt



"Brett uses an interesting work practice, which took me a little time to get to grips with, as we work from different directions. Mine is mainly shutter speed related due to my action and speed-related background. Also, film cameras worked in full stops on the ISO ratings so it was only the question of ISO 125, 250 or 500. Brett sets his aperture first and compensates with ISO, as shutter speed and sensor speed isn't a problem, especially with the $\it f/1.2$ lens! Also flash now has become infinitely

more variable – the camera digital revolution has meant that the photographer now has more compensation 'balls in the air' at any one time. That's why Brett is constantly making changes and compensations in an expert fashion to deliver the high-quality images he does. It's been an enjoyable and very informative experience."





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- Please don't send us your entire portfolio as you may appreciate we receive a lot of submissions and aren't able to look through hundreds of images narrow the selection down and pick your best shots only.

Expert critique

WANT YOUR SHOTS CRITIQUED BY THE *DIGITAL SLR PHOTOGRAPHY* EXPERTS? TURN TO PAGE 61 TO FIND OUT HOW TO SUBMIT IMAGES

STOB DEARG ON BUACHAILLE 1

by Ben Smith

Sony Alpha 7 with a Canon FD 20mm f/2.8 lens. Exposure: 40 seconds at f/11 (ISO 100).

What we think: Buachaille Etive Mor is one of those locations that's so often captured that you sometimes imagine a queue of tripods waiting to be plopped into position – nonetheless, we really like Ben's take on it. It must have been windy – that's a lot of cloud movement for a 40-second exposure! Using a ten-stop ND to lengthen the exposure time has made the brutal weather that we're sure Ben experienced seem all the more dramatic. The only distraction for us is the blurring at the peak of the mountain, which must either be cloud moving in front or spray on the lens or filter.

LANDSCAPE EXPERT Lee Frost



"Love them or hate them, using extreme ND filters, like the Lee Filters Big Stopper, to lengthen exposures is the technique of the moment.

Personally, I like streaky skies and milky water – on the right scene it can look fantastic. Here's one such example. I've seen hundreds of shots of this scene and taken as many myself, but I've never seen it looking like this. The motion in the sky adds a strong 3D feel and really makes the mountain stand out. The moving water is perhaps a little overdone – I'd like to see more texture and detail in it – but it enhances the feeling that we're witnessing the passing of time here, rather than the freezing of it, and this adds a sense of mystery. Without the use of a long exposure, I think the shot would look dull as the light was obviously flat. Opening the shutter for a long exposure has made all the difference, so while the technique is overused, employing it here was a good call."





© VIEW FROM PEGGY'S BRIDGE

by Daniel Ward

Nikon D7100 with Sigma 10-20mm f/4-5.6 EX lens. Exposure: 1/25sec at f/8 (ISO 250).

What we think: A classic Lake District view. Daniel clearly has an eye for composition – the clear water in the foreground invites your eye up towards Buttermere in the distance, which is nicely framed by the hills. The main thing letting this shot down is the blown-out cloud right where you don't want it. This could have been avoided had Daniel used filters, or a tripod and bracketed exposures. A good composition nonetheless and one that he should revisit!

Why it works -

- ✓ Good use of lead-in line
- ✓ Nice composition and crop
- ✓ Great conditions and a fantastic view!





by Slav Nitsov

Canon EOS 450D with Canon EF 50mm f/1.8 II lens. Exposure: 1/500sec at f/6.3 (ISO 800).

What we think: We're drawn to Slav's use of colour in this vibrant street portrait. Although the shot is quite 'busy', the contrasting colours work really well. However, Slav needs to pay more attention to both his camera settings and editing. The shot was taken at a mid-aperture, which Slav admits was due to an accident – it happens to us all! As a result, he has added a faux lens blur, however around the sunglasses and the model's arm there's a distinct halo where his selection isn't accurate enough. If you're going to fake it, more time and greater care is needed, but the ultimate solution would of course have been to double check your settings before pressing the shutter.



Expert critique

MAGICAL MISTS OF SNOWDON

by Patrick Higgins

Nikon D40 with a NIKKOR AF-S18-105mm f/3.5-5.6G VR lens. Exposure: 1/320sec at f/8 (ISO 200).

What we think: If you ever needed convincing that Snowdonia should be on your 'must-visit' list (and our *Location Guide* on page 23 somehow hasn't quite done it), then Patrick's image should cement it. This is an epic scene full of drama; with the mist bubbling out of the valley against a rugged sun-spotted backdrop.

Patrick's composition could be improved, however, as we feel that the softer foreground takes away from the drama of the scene behind it. Having said that, the buildings below help give the mountains scale and make you aware of how vast this landscape is, so we can see why he's left them in. There's not much more we would change – maybe a touch more brightness in the sky as it looks artificially dark, but other than that, good job Patrick!

LANDSCAPE EXPERT Ross Hoddinott



"This is a lovely landscape and Patrick has captured the light beautifully. Spot lighting can produce magical conditions and here the light on the

mountain peaks give the scene an incredible sense of depth and drama. However, the overall composition lacks a focal point. I suspect Patrick included the road to create a lead-in line, but I don't think it does that effectively. Also, the shot is a little 'over-gradded' – with the top of the frame looking artificially dark. This could possibly be remedied in processing, but making a dark sky lighter will result in extra noise, as noise is most prevalent in the shadow areas. Nevertheless, it is still a very attractive scene and Patrick has done a good job of recording it."

WAITING FOR SUMMER

by Mark Sims

Nikon D7000 with NIKKOR AF-S 16-85mm f/3.5-5.6G VR lens. Exposure: 30 seconds at f/11 (ISO 200).

What we think: Long exposures and black and white conversions are like peas in a pod! Mark has used a ten-stop ND filter to artificially extend the exposure time and you can see why – the smooth water and passing clouds are the perfect subjects, contrasting with the static jetty and distant hillside. The pier is a good lead-in line, and Mark has done the right thing in leading from left to right. However cutting out the foreground rocks and adopting a higher camera angle, so that the jetty's posts sit intentionally below the horizon, would create a much stronger composition.

Why it works

- ✓ Use of extreme ND to smooth the water
- Lead-in line from left to right
- ▼ Black & white conversion suits the scene







MADEMOISELLE

by Sebastien Corre

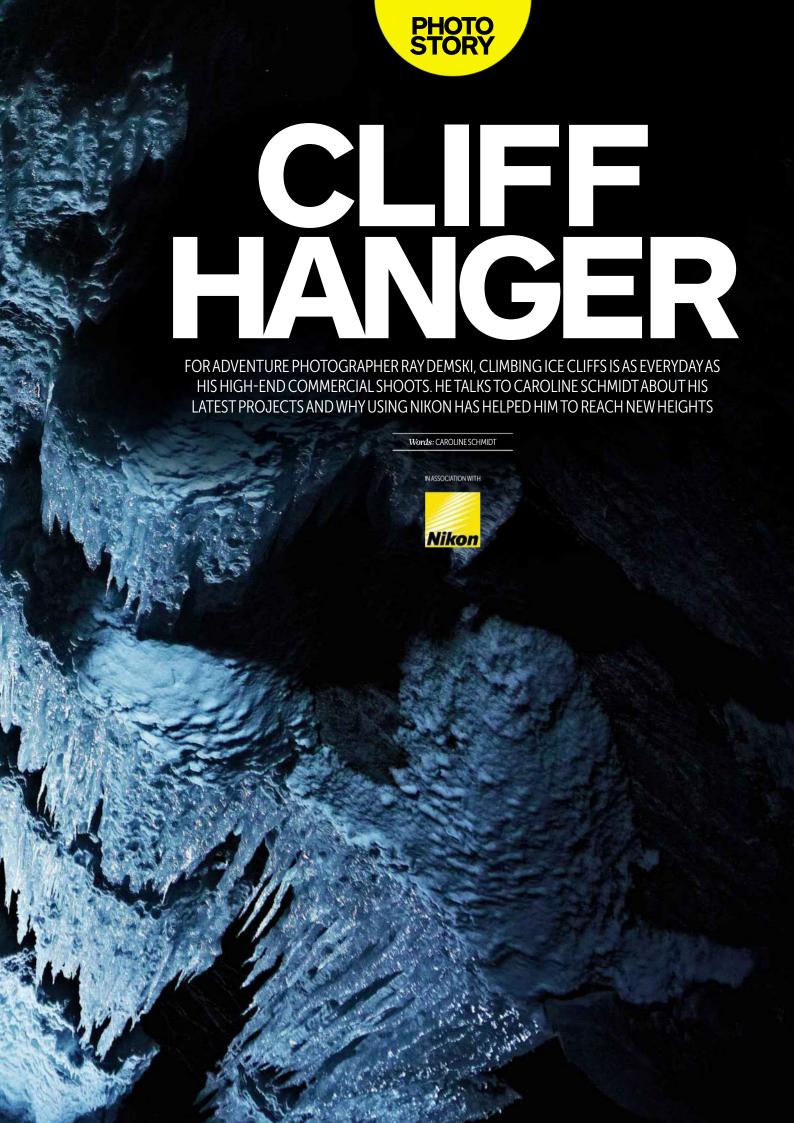
Sony Alpha 7 with Canon EF 135mm f/2L USM lens. Exposure: 1/500sec at f/2 (ISO 160).

What we think: This is a cracking portrait! Sebastien has shot wide open to create the beautiful, smooth bokeh. The foreground foliage adds depth and the diffused light is lovely. The only change we'd make is a slight crop to eliminate that distracting brown leaf on the left and the space above her head.









PHOTOSTORY Ray Demski

BIOGRAPHY



Born in British Columbia, Canada, Ray's childhood was far from ordinary, so it's not a surprise how extraordinary his career has

become. From the age of 14, he spent seven years with his family sailing the world on a 45-foot sailboat, teaching himself how to shoot using a Nikon D70. These early adventures were the formative experiences of one of the most foremost adventure and action photographers of today. Since becoming a finalist in the Red Bull Illume competition, and thus catching the eye of the Red Bull Photography team, he's completed some remarkable projects that had him scaling mountains and he regularly shoots for high-end clients such as BMW, Adidas, Red Bull and Nikon. www.raydemski.com

GOT REALLY interested in climbing some time ago when I was asked by Red Bull to photograph athlete Bernd Zangerl climbing the 30m 'Molecule man' in Berlin. Some years and a lot of climbing later, Bernd - by now a good friend - asked me to join him on a climbing trip to the Indian Himalaya. Being able to climb has given me access to the mountains and incredible viewpoints. When we were shooting in the Himalayas we used flash at night to capture the athletes against star trails and it got me thinking about how similar lighting could work well for ice climbing, too. That was the beginning of my Ice Nights project, which took place in the Avers valley, Switzerland.

"I wanted to bring a different look to ice climbing by illuminating an icefall with highquality light. We had Alex Luger climb a 30m icefall at night, while I hung off a rope above him. We lit the scene with three Broncolor Move 1200L battery units: two with Para 88 reflectors and one with a standard reflector or bare bulb, and shot the images with a Phase One q180 80MP back on the 645DF

camera. It was a bit like turning the icefall into a gigantic studio. It was to be the first of a series but then Red Bull Photography offered to support my next project, Norwegian Ice, and that allowed us to make huge leaps.

"Norwegian Ice was a special project. There are always projects kicking around that if you had the budget you'd go and do; and Norwegian Ice was one of those. After doing some research, I discovered that 2014/15 was the high point in a roughly 11-year cycle when the aurora borealis would be at its strongest: a perfect time to arrange a shoot to combine ice climbing and the northern lights. The shoot needed a lot of research into the right location and arranging the athletes so it was a long-time coming but we got a great result.

"The equipment used for Norwegian Ice was very different to Ice Nights as I needed to be much lighter but still retain quality.

We had easy access in Switzerland for Ice Nights, so I could afford to be much heavier and use several assistants; but shooting in the Lyngen Alps of Arctic Norway was very different. The trip took two weeks and was planned with a lot less information about the location than we did with Ice Nights, so while I had an idea, we didn't know exactly how or where we'd be shooting - we had to

Above: Taken with a Nikon D800, this image for Norwegian Ice needed an exposure of 13 seconds at f/2.8 (ISO 2000). Left & Right: The project took two weeks to complete and several nights of camping while waiting for the right conditions. Far right: The team enjoy the spectacle of the Northern Lights after a successful night's shoot.

the trip, ducking into a lodge once in a while for charging and drying out. I chose to use a Nikon D800 and D4 and two Nikon SB-910 Speedlights for lighting, with external battery packs to give them longer battery life in the cold. I set one flash on the ground and screwed another into the ice above the climber; we couldn't afford for the batteries to go flat and, at temperatures as low as be more mobile. We camped out for most of

-37°C, power drains quickly. I didn't use 🚁







PHOTOSTORY Ray Demski





Above: Portraits of climbers Hanno Schluge and Alex Luger illuminated by flash for the *Ice Nights* project.

Right: Climber Alex Luger photographed for *Norwegian Ice* using 25 seconds at f/2.8 on the Nikon D4.

Farright: This shot shows Alex Luger as he scales Bruckenfall. The image was taken at 1/320 sec at f/5.6.

modifiers but we did attach green gels for one of the shots to make the lights' colour closer to that of the aurora borealis, and if I needed the light to be more focused I'd use the Speedlights' zoom function.

"When scouting for locations, we had to find an appropriate ice wall for climbing that also gave us a nice view of the sky. We then had to await a clear night with strong aurora borealis and good conditions for ice climbing. If it's warm during the day but drops too low at night, the ice can become hard and brittle, making it very difficult to scale. In the end we found two locations and we got lucky on two nights.

"While I had in my mind how I wanted the images to look, we couldn't test shoot the aurora borealis so it was just an idea. Originally I wanted to freeze the athletes with flash as they climbed, but we needed 15–20 second exposures to get the sky bright enough, which meant our athletes had to hold still in dangerous mid-climb poses. The flash lit them and the shutter stayed open to capture the aurora. I'm happy I managed to get the images in a single shot and not have to composite in post-production.

"I try to shoot eye level or higher than the athlete most of the time as it's good to see their face and the exposure of the climb, but it's tricky to remain perfectly stable when



you're hanging from a rope, so for some shots we had to anchor a tripod to the wall while I braced myself on the rope. I had to wear pretty thin gloves to be able to handle the camera and change lenses, so I had to take care to avoid frostbite, and the situation is similar for the climbers. It was a long time waiting for the perfect moment for the aurora to appear and then working fast to make the best of it in the short time frame.

"Originally *Ice Nights* was conceived as a series that would develop into shooting bigger and harder to access locations, but *Norwegian Ice* progressed the project much faster than I had planned. Going from *Ice Nights* to capturing the aurora was a big leap, but I'm now considering taking on a true alpine climb. I've got a bunch of other wild ideas in mind, so keep your eyes open for my next project!" www.raydemski.com. Follow Ray Demski Photography on Facebook and see more images from the Norwegian Ice project online at: www.redbullphotography.com. Ray is based in Munich, Germany, and is represented by Upfront.

RAY DEMSKI'S KIT

Ray's equipment is vital to the images he creates, as adventure shoots place heavy demands on his gear. For Norwegian Ice, he relied on a Nikon D800 and D4, but he also now uses the Nikon D810. With its 36-megapixel resolution, superb low-light performance and EXPEED 4 processor, it produces the image quality he needs. The D810 is built for tough projects in extreme conditions; it features longer battery life and stringent weather- and dust-sealing.

Ray also has a D750 for when he needs to be light and fast and, shooting at 6.5fps, it gets him closer to the Nikon D4 without the extra weight. Ray uses fast NIKKOR lenses, with one of his favourites being the AF-S 24-70mm f/2.8G for its angle-of-view and optical brilliance. He also carries a NIKKOR AF-S 70-200mm f/2.8G EDVR II, AF-S 16mm f/2.8D fisheye, AF-S 24mm f/1.4G and AF-S NIKKOR 16-35mm f/4.







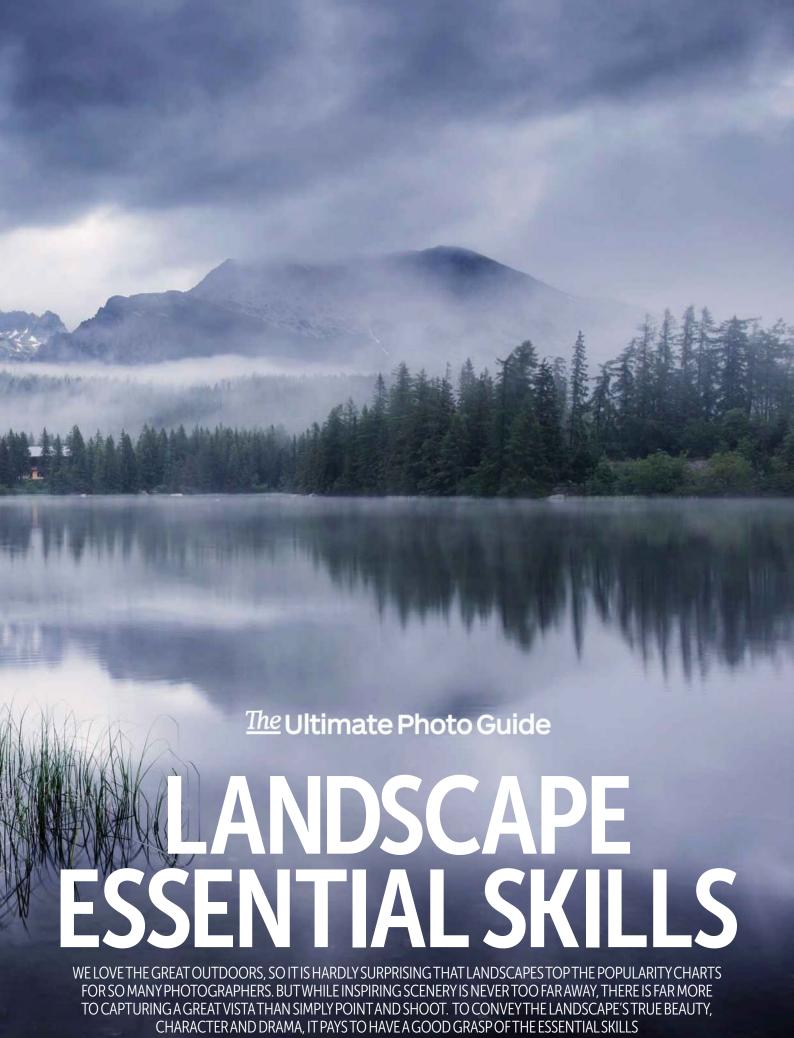


IMAGE: ROSS HODDINOTT



UNDERSTANDING LANDSCAPES

FEW SUBJECTS ARE AS POPULAR OR ACCESSIBLE, BUTTHAT ISN'TTO SAY IT IS AN EASY DISCIPLINE. BEAUTIFUL SCENERY DOESN'T GUARANTEE YOU CAN TAKE GOOD IMAGES

O CAPTURE A truly great landscape image, you need to take the viewer on a journey – leading their eye around the frame and retaining their gaze by implying depth or motion. Obviously, composition is a key component, and is something we focused on in the last issue (April 2015, issue 101). However, a good understanding of your camera gear, exposure and filters is every bit as important. In order to successfully convey the beauty of a location – not to mention

your vision and creativity – you need to make educated choices. What focal length suits the scene best? Is a fast or slow exposure needed? Do you require front-to-back sharpness, or would a shallower zone of focus create a more artistic, interesting result? Would filters enhance the scene? These are questions you need to ask yourself when shooting landscapes and, with time, the answers become instinctive, and this in-depth guide will put you on the right path.

LANDSCAPE Gear



WIDE-ANGLE LENS:

Achoice of focal lengths, from 20-200mm is recommended for photographing

landscapes. However, a wide-angle will be your most useful lens, with zooms being the most practical and versatile. One in the region of 17-35mm (around 11-24mm for APS-C) is the perfect choice, providing a wide, stretched and interesting perspective.



LANDSCAPE Clothing



BASE LAYERS:

You won't feel creative if you are cold or wet, so appropriate outdoor clothing is essential. Good base-layers, designed to

wick moisture away from your skin and keep your body warm and dry, are important in cold or windy weather. Combined with good outer layers, they will ensure you keep warm while standing around waiting for the right light.



HAT: Not just a fashion statement – your parents probably told you all about the benefits of wearing a hat when you were a kid! We lose so

much heat from our head that a hat is a logical and important item of clothing in freezing weather. A woolly hat or beanie is fine. In really cold weather, you may even be better off wearing a full-face balaclava.



GLOVES: Good gloves are important. However, in addition to being warm, they need to be thin enough to allowyou change camera settings

and attach filters. There is a range of Etip gloves available designed for use with mobile phones too. Cycling or golfing gloves can actually prove suitable for photographers too.



WIND & WATERPROOF JACKET: Quality wind and waterproof jackets are costly, but an important long-term investment. They will keep you

protected from the wind chill and ensure your body stays warm and dry. Look at leading brands, such as 66 North, Montane, North Face, Paramo and Rab, amongst others.



WALKING BOOTS:

Many of the best, most photogenic viewpoints are relatively wild and remote. Often you will need to walk over uneven

ground or clamber over rocky foreshores to reach where you want to go, so good, supportive and waterproof footwear is an absolute must. Don't scrimp on boots or you'll regret it quickly – Brasher, Merrell, Salomon and Scarpa are all top brands.



TRIPOD:

An essential tool for the landscape photographer. They offer the stability required to shoot

longer, creative exposures and allow you to carefully fine-tune your composition. If budget allows, carbon-fibre legs are lighter and more comfortable to carry. Opt for sturdy legs that provide stability, height and low-level capability.



TRIPOD HEAD:

Your choice of tripod head is almost as important as the legs. The design that you

choose will greatly depend on your preference. Ball-and-socket heads are popular, but for static subjects – like landscapes – the added precision of using a geared head can be advantageous. Ideally, try before you buy to see which your prefer.



FILTER SYSTEM:

Filters (page 84) remain an essential tool for landscape photographers, even in the digital

age. It is best to invest in a system designed to hold square and rectangular filters. They are available in different sizes, however smaller 84/85mm systems can cause vignetting on wider lenses. Therefore, if your budget allows, invest in a 100mm system.



REMOTE DEVICE:

Using a tripod unfortunately doesn't guarantee shake-free results. Even the action of

physically pressing the shutter button can create camera movement that may soften image quality. Therefore, it is best to always use some sort of remote release device when shooting landscapes. This might be in the form of a cable release or wireless remote.

ACHIEVING A GOOD EXPOSURE

EXPOSURE IS THE VERY HEARTBEAT OF PHOTOGRAPHY. IN ORDER TO EXPOSE CORRECTLY AND CREATIVELY, YOU NEED TO BE IN CONTROL OF YOUR SETTINGS

IGITAL CAMERAS ARE so intelligent today that you can simply select one of your camera's automatic exposure modes, and start shooting. However, doing so would severely limit your creative options. Many consumer cameras boast a number of Picture or Scene modes, tailored to optimise settings for a particular subject. There is normally a Landscape mode, which will bias settings to suit this subject; however, they offer photographers very limited control – instead, you are far better off switching to aperture-priority mode.

While some photographers favour working in manual mode, aperture-priority is perfectly suited to landscapes. It is a semi-automatic mode, where you select the f/stop required, and the camera does the rest for you – setting the 'correct', corresponding shutter speed. This mode gives you complete control over depth-of-

field – allowing you to vary the zone of focus to suit the scene in front of you. The mode keeps things simple and easy, while affording you the level of control required for shooting and doing justice to great vistas. It is actually the mode most professional landscape photographers tend to use.

Metering systems are not infallible, however. They are easily fooled and prone to error in tricky, contrasty and/or low light; or when a scene is dominated by light or dark tones, such as when shooting in snow. Thankfully, exposure error is quick and easy to identify if you keep an eye on the histogram. Some models allow you to view a 'live' histogram in LiveView mode. However, more commonly, you view the histogram after you've taken the image, by viewing the histogram screen while reviewing shots. Quite simply, the histogram is an essential exposure aid – see the panel below.









HOW TO READ A HISTOGRAM TO ENSURE A GOOD EXPOSURE

Of all digital innovations, the histogram is surely the most useful. It provides a graphic representation of how the tones are distributed in the scene. They are twodimensional graphs, with the horizontal axis representing the picture's tonal range from pure black (far left) to pure white (far right). The vertical axis shows how many pixels have that particular value. Histograms with large numbers of pixels grouped at either edge normally indicate poor exposure. For example, graphs skewed to the left would indicate that the shot is dark and probably underexposed. If there is a large peak to the far right, the histogram is indicating that the photo is very light and overexposed. When the histogram is effectively 'overflowing' off the edge of the graph, it is said to be 'clipped' - with no detail or data recorded in those areas.

You will often read about the so-called 'perfect' histogram – one showing a full range of tones across the horizontal axis with the majority of pixels placed around the

centre so the graph resembles a range of mountain peaks. However, in practice, the shape of histograms vary hugely and are very dependent on the brightness of the scene. For example, if you are shooting a silhouette, you would fully expect to see a sharp spike to the left of the graph. Therefore, always employ a degree of discretion when interpreting histograms.

Histograms will quickly reveal under and overexposure, giving you the knowledge and confidence to alter exposure accordingly. If an image is too bright, reduce the exposure by applying negative compensation (giving a faster shutter speed). If the shot is too dark, apply positive compensation (for a slower shutter speed).

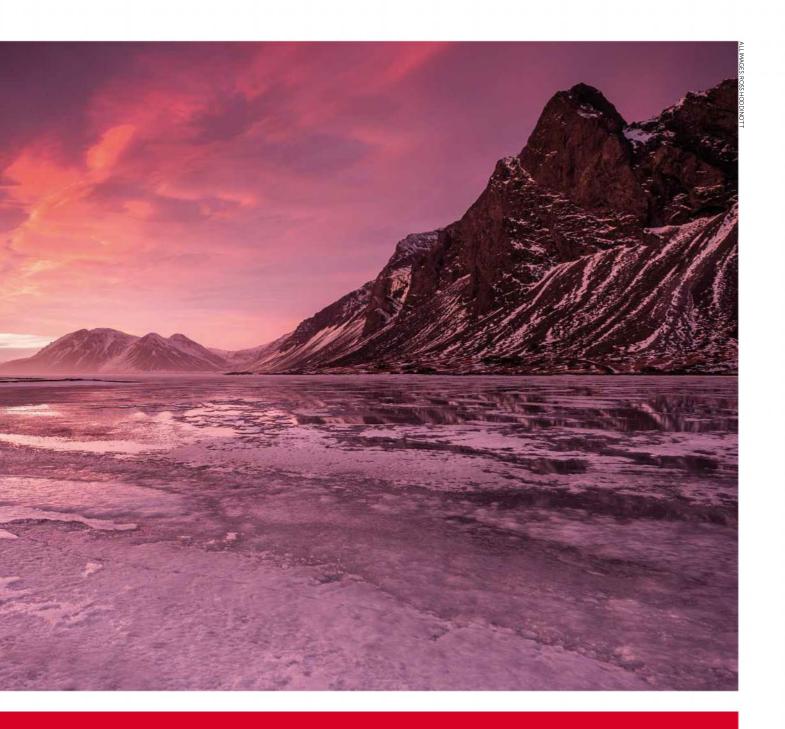
The histogram is also essential should you wish to expose to the right (ETTR) in order to maximise detail – see panel, right.

Above: A quick glance at the histogram shows you everything you need to know about your exposure. A graph weighted to the left often indicates underexposure, while one weighted to the right might mean overexposure, depending on the scene.

EXPOSING TO THE RIGHT

Exposing to the right is a slightly more advanced, Raw-file-only, technique designed to help photographers capture the largest, highest-quality file possible. Due to their design, image sensors record more tonal levels – and less noise – in the brightest part (the right side) of the sensor. Therefore, if you intentionally overexpose images so that as much information as possible is recorded in the right of the graph, you will achieve larger file sizes with smoother tonal transitions and more detail.

Exposing to the right – or ETTR – needs to be applied with care. If you push your exposure too far – to the point where the highlights are actually clipping – you risk ruining the shot. Instead, you are looking to achieve an exposure where the histogram is nuzzling up to the right edge of the graph. Keep applying positive exposure compensation until



you do this. Different scenes will require different levels of exposure compensation – use the histogram as your guide. By their nature, ETTR images can look very washed out and devoid of contrast at first. However, once you adjust exposure, brightness and contrast during your Raw conversion, the image will once again resemble the original scene. By capturing more tonal levels and less noise, your images will enlarge more successfully too. This is great news for landscape photographers who want to capture fine detail and display their images big for printing and publishing. Exposing to the right requires using slower shutter speeds, so be aware of the effect this will have on your scene.

Right: The image looks overexposed on the back of the camera and before processing, but the histogram tell us that no data has been 'clipped'. During processing, the exposure is recovered, retaining maximum detail and minimum noise.









UNDERSTANDING APERTURES

ROSS HODDINOTT REVEALS HOW APERTURE CHOICE IMPACTS ON THE LOOK & SUCCESS OF YOUR IMAGES, AFFECTING BOTH DEPTH-OF-FIELD AND EXPOSURE

UST AS THE pupil of the eye widens and contracts to control the amount of light reaching the retina, the size of the aperture can be made bigger or smaller to determine the amount of light allowed to pass through the lens and strike the sensor. Select a wide aperture and light can pass through quicker. Select a small aperture and it will take longer for sufficient imageforming light to expose the sensor, but you achieve a greater depth-of-field as a result. Aperture has a reciprocal relationship with shutter speed (page 80).

Aperture size is represented by numbers, or f/stops. Typically, the scale ranges from f/2.8 to f/22, although this varies depending on the lens. Confusingly, larger apertures are represented by lower numbers, for example f/2.8 or f/4. While larger numbers such as f/16 or f/22, indicate a small aperture.

Aperture choice is one of the most important decisions you have to make when taking landscapes. You need to be in full control of aperture selection, which is why we recommend you use your camera's aperture-priority mode; the right aperture can help your landscapes look threedimensional and lifelike. You will normally want a deep zone of focus to ensure everything from your foreground to the

horizon is acceptably sharp. Obviously, there are exceptions to the rule. For example, a shallow depth-of-field can be useful to help make a key subject stand out against its surroundings - maybe a building or tree within the landscape. However, more often than not, you will want a large zone of focus when shooting sweeping views, so it's best practice to opt for a small aperture like f/11 or f/16. It is normally best to avoid your lens's smallest apertures, though, as they tend to suffer from an image degrading effect called diffraction (see panel, opposite).

IMAGES: ROSS HODDINOTT

There's no such thing as the best aperture for landscape photography – it just depends on the scene, your set-up, and the result you desire. However, in most instances, selecting f/11 or f/16 will generate sufficient depth-offield for landscapes. However, there are other factors controlling depth-of-field to consider too. For example, where you focus will affect depth-of-field too - we will look at this more closely over the next few pages.

Focal length also affects depth-of-field. Longer lenses appear to create a shallower zone of focus than shorter ones. Happily, wide-angles, the mainstay of landscape photography, have an inherently large depth-of-field, making it easier to achieve sufficient focus when shooting large vistas.

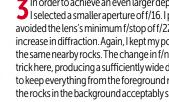


2 To generate a wider depth-of-field, I decided to select a smaller aperture and in doing so extend depth-of-field. Remember, shutter speed lengthens as you decrease the size of the aperture, so a tripod is important for stability. I kept my point of focus exactly the same and the subsequent image is sharper. However, viewed at 100%, distant objects, like the cliffs, still aren't quite sharp enough...











For the vast majority of landscapes, you will desire For the vast majority of tantascapes, , 5 = ...
front-to-back sharpness. This scene proved no different. I wanted everything from the pebbly

foreshore to the cliffs in the distance to be acceptably in

focus. I composed my shot, focused on one of the larger

However, by using a large aperture of f/2.8, everything

stones in the foreground, and released the shutter.







JARGON BUSTER Diffraction

Once you grasp that smaller apertures generate more depth-of-field, you might assume that you'd be best to always use your lens's minimum aperture. However, an optical effect called diffraction actually softens image quality when you employ the very smallest apertures, so they're best avoided.

Diffraction is caused by image-forming light striking the edges of the diaphragm blades and scattering. This softens overall image quality. At larger apertures, the amount of scattered light is proportionally quite small, but as the aperture is stopped down (reduced in size) the percentage of diffracted light increases. Therefore, despite depth-of-field increasing, image sharpness actually decreases. Diffraction affects lenses differently, so the best way to see how your lenses perform is to do

your own tests. Take a series of shots of the same scene at different apertures and then enlarge a small portion of each and compare. Typically an aperture of around f/8 or f/11 will be the best quality and relatively diffraction-free. However, if this doesn't provide sufficient depth-of-field for the scene, don't panic if you have to select a slightly smaller aperture. An aperture in the region of f/13 or f/16 is normally a good compromise, generating extensive depth-of-field while keeping diffraction under control.

While you will normally wish to avoid diffraction, it can be useful on occasions. Diffraction will cause a point source of light to become a star burst shape. So if you are photographing the sun, and wish to add interest to the shot by capturing a star burst effect, set your aperture to f/22.



MASTER SHUTTER SPEEDS

PRO ROSS HODDINOTT EXPLAINS HOW CHOOSING THE RIGHT SHUTTER SPEED DETERMINES NOT ONLY THE EXPOSURE, BUT HOW MOTION IS RECORDED

HUTTER SPEED IS the second most important factor to control exposure and it has a reciprocal relationship with aperture. It refers to the time the camera's shutter remains open during exposure. This can be very brief – as fast as 1/8000sec on some digital SLRs; but it can also be very slow, up to 30 seconds – or as long as your battery will last while using the Bulb mode – several minutes or even hours is possible.

The exact length of exposures depend on the available light, the aperture and ISO selected. In aperture-priority mode, the camera automatically selects the shutter speed, choosing a length it believes will go with your choice of aperture to create a perfectly-exposed result. In manual mode, you need to dial in the shutter speed yourself.

For landscape photography, you will typically want to keep the ISO to a low value to maximise image quality – in the region of ISO 50-200. You will also often be using small apertures to generate a generous depth-of-field. As a result, shutter speeds can be quite lengthy – particularly when shooting in low light or during the golden hours. At slower shutter speeds, the risk of

camera shake is high when shooting handheld, so use a tripod whenever possible.

During longer exposures you can blur subject movement to create the impression of motion. Although many people consider landscapes a static subject, in reality they are often full of movement – for example, clouds, water and foliage. How you decide to record subject motion can have a significant effect on the look of your landscapes. A fast shutter – upwards of 1/500sec – will freeze most movement, suspending it perfectly in time. Slow shutter speeds, in the region of 1/2sec or longer, will begin to blur motion, potentially making your images look less static and more interesting.

While the available natural light will greatly dictate how long your shutter speed needs to be, you can also manipulate it creatively. For example, if you require a fast shutter speed to freeze movement – maybe to capture large waves crashing against coastal cliffs – you can generate one by increasing ISO sensitivity or opting for a wider aperture. If you wish to select a longer exposure length, you can do so using Neutral Density (ND) filters (see panel below).



Having found a nice composition to capture the incoming tide, I firmly pushed my tripod into the sand for stability. An aperture of f/14 generated good depth-of-field, and I chose ISO 100. The corresponding shutter speed was 1/125sec. I released the shutter as the tide rushed over the rocks – the result is rather messy.



2 To create a better sense of motion, I attached a solid ND filter. I opted for a Lee Filters Little Stopper – equivalent to six stops of light. This increases the exposure to one second. This is often a nice length for capturing water motion, creating an intentional level of movement, while still retaining interest and texture.



3 I wanted to create an even more extreme effect to reduce the water to a milky blur. I replaced the Little Stopper with a Big Stopper – an extreme ten-stop ND filter. Doing so extended the shutter speed to a lengthy 15 seconds. This created an ethereal, creative result, which in this instance produced my favourite shot



JARGON BUSTER What's a 'stop'?

Changes in shutter speed, and aperture, are normally referred to in 'stops'. A'stop' is a doubling or halving of an exposure value – or, in other words, the amount of light reaching the sensor. For example, if you adjust a shutter speed from 1/15 sec to 1/30 sec, you are halving exposure – making it a stop faster by reducing the amount of light reaching the sensor by half. Alternatively, if you selected a speed of 1/8 sec instead, you would double the amount of light striking the sensor, increasing exposure by one stop. Doubling or halving the ISO is also the equivalent of a stop. Digital SLRs allow exposure time to be adjusted in one-stop, 1/2-stop and 1/3-stop increments for added precision.



THE BENEFITS OF USING A SOLID ND FILTER

Solid Neutral Density (ND) filters are designed to absorb light in order to artificially lengthen shutter speeds for creative effect. They affect the entire scene and shouldn't be confused with graduated ND filters (page 84). Solid NDs are an essential tool among both professional and enthusiast photographers alike. You can buy circular, screw-in ND filters or, if you prefer, square slot-in versions compatible with a filter system. The darker the filter, the greater its density and the more light it absorbs. They are commonly available in one-stop, two-stop, three-stop and four-stop densities – although more extreme NDs are also available (page 85). To give you an example of their effect, if the original unfiltered shutter speed is 1/4sec, exposure time will be prolonged to 1/2sec using a one-stop ND; one second with a two-stop ND; two seconds with a three-stop ND; or four seconds with a four-stop solid ND attached. A three- or four-stop density can prove particularly useful, causing a significant exposure shift and altering the look and feel of the image.





LET'S FOCUS ON LANDSCAPES

LANDSCAPE PHOTOGRAPHERS OFTEN DESIRE FRONT-TO-BACK SHARPNESS. CAREFUL FOCUSING TECHNIQUE IS ESSENTIAL, AS ROSS HODDINOTT EXPLAINS

IDE-ANGLE LENSES possess an inherently large depth-of-field. Therefore, you might assume using one together with a small aperture is all you need to do to capture landscapes that are sharp throughout. You can't be lazy with focusing, though; if you focus poorly, you will waste depth-of-field unnecessarily.

A lens can only focus precisely on one plane, so sharpness naturally and gradually decreases either side of this. Depth-of-field is the acceptable level of focus extending either side of the point of focus. It extends approximately one-third in front of this point and two-thirds beyond it. Therefore, if you simply focus on, or close to, infinity, you will waste the depth-of-field falling beyond your focal point. Equally, if you focus too near into the scene, you won't get the full benefit of the depth-of-field available to you. A popular method among landscape photographers for helping maximise depth-of-field is to focus approximately one-third of the way into the

scene. While this might not be the most scientific way of maximising depth-of-field, it is actually a fairly effective method. However, there is a better way...

There is a formula known as the hyperfocal length, designed to provide the distance that will maximise depth-of-field for any given aperture and focal length combination. Using the hyperfocal distance is highly accurate, which leaves nothing to chance. There are downloadable charts and also phone apps that do all the hard work for you – all you need to do is input your chosen focal length and f/stop, and it will provide the distance you should focus on.

Many landscape photographers prefer focusing manually. However, in reality it doesn't matter how you achieve focus – as long as you know where to focus. Providing you know this, it doesn't matter if you achieve focus using single point AF, manual, or via LiveView – much will depend on personal preference and your eyesight.



TOCUSING TO ATHIRD Whereabouts you focus within a scene is important when photographing far-reaching views. Do not simply set your lens to infinity and think that will do – you will waste all the depth-offield falling in front of your point of focus, resulting in foreground objects looking soft. Instead, a fairly reliable method is to focus one-third of the way into the frame. This should help maximise depth-of-field and keep everything within the frame acceptably sharp.





2 CALCULATE DEPTH-OF-FIELD While focusing one-third of the way into the frame is fairly reliable, a far more precise technique is focusing on the hyperfocal distance. By using an app or chart, you can calculate the exact distance that maximises depth-offield for any focal length and aperture combination. In this instance, the lens was set at 17mm and f/11. Various apps are available, but DOF Master is a favourite. Remember, sensor size will affect the calculation.



3 USE HYPERFOCAL DISTANCE In this instance, the settings produced a hyperfocal distance of 0.87m. The lens is focused 1m away as it is normally best to round-up distances. If there is a detailed depth-of-field scale on the lens barrel, you can manually set the distance. If not, focus on an object you estimate is that distance away – a small degree of 'guestimation' won't hurt. The subsequent image is sharper in the immediate foreground, yet still retains focus in the distance view.

JARGON BUSTER Focus stacking

Focus stacking is becoming an increasingly popular option among the landscape fraternity. It's used when you can't generate sufficient front-to-back sharpness through your selected aperture choice. It's an image-blending technique where you take a sequence of frames, each focused at a different point within the scene, and then merge them together in Photoshop or another photo-editing software. The final result is an image boasting far greater depth-of-field than would have been possible using one shot at the same aperture. For it to work, the camera needs to remain in a fixed position on a sturdy tripod. A sequence of four or five images normally creates good results.



USING FILTERS IN LANDSCAPE PHOTOGRAPHY

WHEN SHOOTING STUNNING LANDSCAPES, THERE ARE A HANDFUL OF FILTERS THAT YOU SHOULD NEVER BE WITHOUT. GRADUATED NDS, POLARISERS AND EXTREME ND FILTERS ALL REMAIN ESSENTIAL TOOLS FOR THE JOB, EVEN TODAY

YOU MAY WELL be wondering why you might still need physical filters today, when photo-editing software offers seemingly endless possibilities to tweak, adjust and manipulate images to your heart's content. However, while technology has made certain filter types redundant, others remain absolutely essential for landscape photography. Different filters have different uses. They can be either corrective or creative, but they can also be mixed to do both jobs – so don't be afraid to combine filters to achieve the right results.

Most landscape enthusiasts wouldn't venture out into the great outdoors without a polarising filter, plus a handful of neutral density grads and a solid ND filter. Each filter is capable of transforming your shots and their effect can't be easily replicated using

software – quite simply you need to filter the scene and light at the time of capture.

Filter use is a genuine skill. Filters should enhance a scene and the results should, ideally, look natural and believable. Only use filters if they will genuinely improve your shot – too many photographers use them inappropriately or simply out of habit, so beware of this. The true skill is not in just knowing how to use filters successfully, but when to use them. When applied correctly, the right filtration can turn a good shot into a great one. So, you can see, it's really is no coincidence that virtually all landscape professionals continue to rely on filters.

So you can learn more about the key filter types on offer, we've looked at each type in great depth to explain their purpose and how you can get the best from them...





POLARISING FILTERS

A circular polariser is another must-have filter for landscapes. By reducing glare and reflections, the filter restores saturation and is well known for its ability to darken blue skies, making clouds stand out. They are useful when shooting woodland interiors too, giving leaves and foliage added vibrancy.

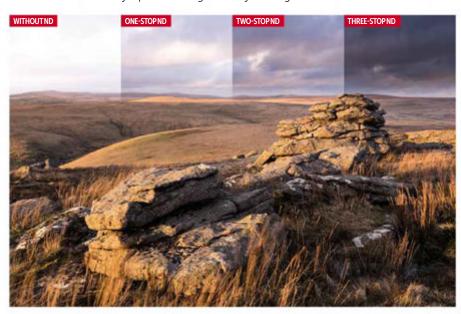
They are commonly a circular, screw-in design, constructed from a thin piece of polarising foil, sandwiched between two pieces of glass. The front of the mount rotates, allowing you to adjust the amount of polarised light passing through. By using the viewfinder, or LiveView, you can see reflections come and go and the intensity of colours change as you rotate the filter.

The strength of a polariser varies depending on your angle in relation to the sun. The most pronounced effect is when you use the filter at 90° to the sun – known as Brewster's angle. The filter will have little effect on hazy skies and some surfaces, like metallic objects, remain unaffected.

We wouldn't recommend keeping the filter on at all times. A polariser absorbs up to two stops of light, lengthening the exposure, which is not always desirable, so only attach one if it is called for. Also, be careful not to over-polarise scenes, making blue skies too dark, and be aware of uneven polarisation as well – when the sky is darker in some areas than others. Ultra wide-angle lenses are particularly prone to this. To alleviate the issue, reduce the level of polarisation or use a longer focal length.

Above: POLARISER COMPARISON

These images were taken within minutes of each other, but are very different. The first was taken without filtration, the second using a polarising filter. The colours of the sky and water are deeper and the shot is more vibrant. A Lee Filters Landscape Polariser was used, which has a warming effect.



GRADUATED NEUTRAL DENSITY FILTERS

One of the biggest challenges facing landscape photographers is how to deal with the contrast between bright skies and darker foregrounds. Typically, the sky is several stops brighter than the landscape - and the level of contrast can grow greater around sunrise and sunset. If the difference in brightness exceeds your camera's dynamic range you will find that the sky will look bright and overexposed, or the foreground dark and underexposed. In order to capture a landscape that is correctly exposed throughout, you can do one of two things. You could take a couple of exposures - one exposed for the sky, the other the land - and then merge them during processing. Alternatively, you can use a graduated ND filter to balance the light.

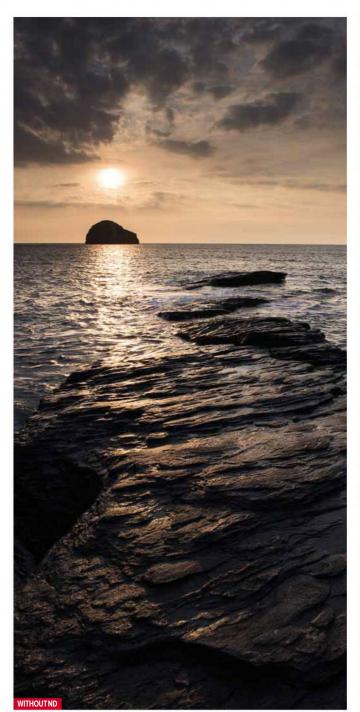
ND grads are the best in-camera solution and the preferred choice for most landscape photographers. They are half-clear, half-coated, with a transitional zone between. By aligning the feathered area with

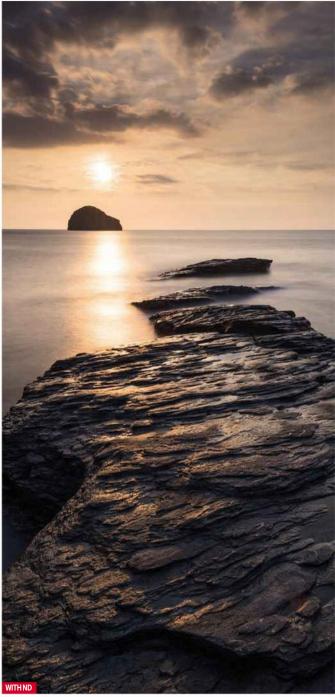
the horizon, you can hold back the sky, while giving the foreground sufficient exposure.

They are typically rectangular filters, designed for use with a filter system. You can easily slide them up and down into position. Both hard- and soft-edged versions are available. Hard-edged grads are ideal for scenes with a straight horizon. However, when shooting a scene with an uneven horizon – such as one featuring mountains, hills or buildings – it is best to use a soft grad, so the coated area doesn't overlap the land abruptly. They are available in different densities, usually one-, two- and three-stop versions. Arguably, a two-stop hard ND grad is the most useful and versatile.

Above: GRADUATED ND COMPARISON

This shows the effect of ND grads with different strengths. Without a graduated ND, the sky is overexposed. A one-stop ND retains detail in the sky, but looks too light. A two-stop balances the light and creates a natural result. A three-stop ND grad is too strong, making the sky look too dark.





EXTREME ND FILTERS

Extreme NDs are similar to normal solid ND filters, just their density and effect are more extreme. They've become a must-have accessory for landscape photographers, and are hugely popular today among creative landscape photographers who like the impression of movement in their shots.

The most common density is one absorbing ten stops of light – the Lee Filters Big Stopper is particularly popular. However, you can buy filters of various strength, from six to 13 stops. Screw-in and slot-in versions are available – there are also vari-strength NDs (or faders), which allow you to adjust the filter's strength within a given range.

Extreme NDs can produce wonderful effects. Due to their density, they can generate long exposure times of several seconds or even minutes. This can produce surreal results, with scudding cloud recording like brush strokes and moving water rendered smooth and glassy. It's a

highly creative filter type with the potential to transform scenes and create atmosphere. They are also a lot of fun to use!

Focus and compose your shots prior to attaching the filter, as the viewfinder image will be dark once the filter is in place. Alternatively, switch to LiveView, as most cameras will compensate for the filter's strength and provide a bright enough preview. Extreme ND filters tend to fool TTL metering systems, so you may find you have to switch to manual exposure mode and calculate exposure length manually. If exposure exceeds 30 seconds, switch to Bulb mode and, using a remote release, time the exposure manually. To help you achieve the correct exposure, most extreme ND filters are supplied with a chart, listing before and after exposure values. There are also apps, such as NDCalc, which allow you to input your original, unfiltered shutter speed and filter density in order to calculate the exposure length you need.

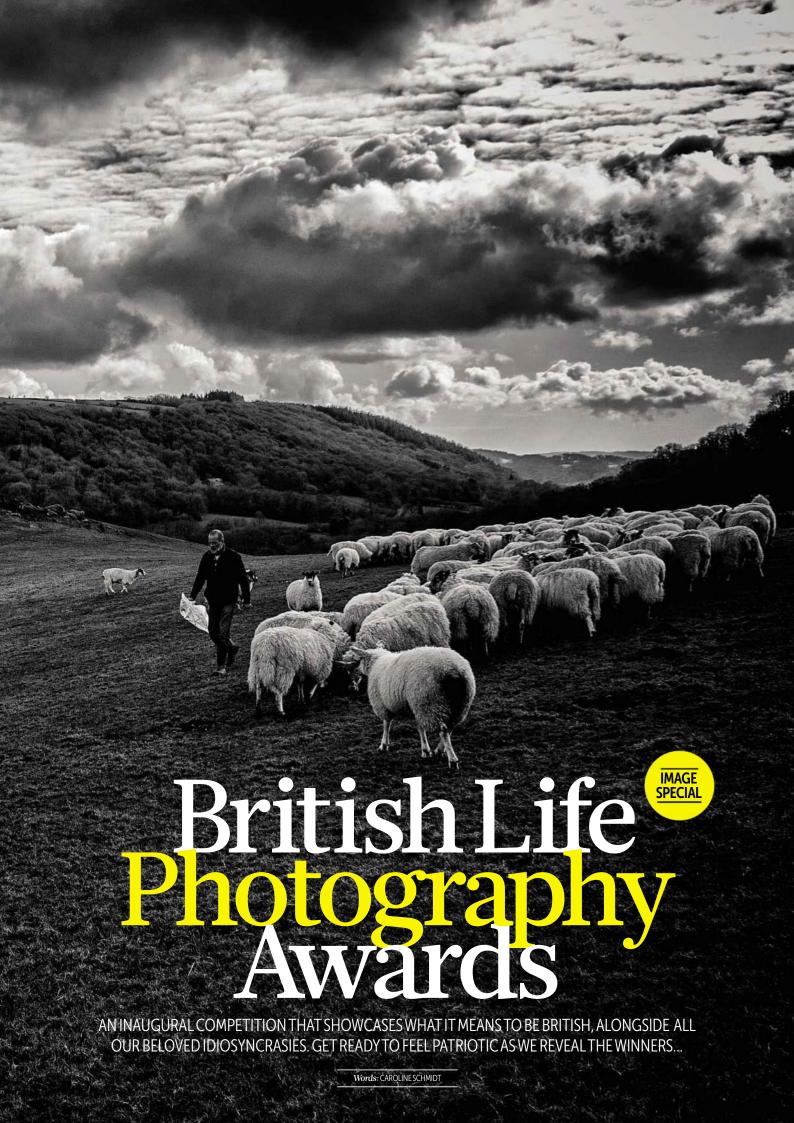
JARGON BUSTER Bulb mode

When using extreme NDs, or in low light, you will sometimes need to select an exposure exceeding your camera's maximum automatic exposure length, which is typically 30 seconds. To do this, set your camera to Bulb or B mode. Doing so allows you to lock the shutter open for whatever duration you want, using either a remote release or wireless device. Many cameras have an automatic counter on the LCD to help you time your manual exposure accurately too – alternatively use a watch or the clock/timer on your mobile phone.

Above: EXTREME ND COMPARISON

Extreme NDs can add interest, atmosphere and mood to otherwise ordinary scenes. They are good 'grey day' filters, working well in overcast light. They are fun to useand capable of creating great results – we recommend you buy one! Like all filters, they need to be used appropriately, so don't attach one for the sake it – be sure it improves the end image.





British Life Photography Awards



AST YEAR SAW the opening of a new, arguably long-overdue, photography competition. A contest that celebrates British pride, culture and talent above all else and has brought a dying appreciation for documentary photography back to life. With an overwhelming number of submissions, from amateurs to high-end pros, the British Life Photography Awards has provided a wealth of arresting, poignant illuminating and humorous images about our beloved nation.

Born from a desire to help revive the use of documentary photography and to showcase the spirit of Britain, the Sonysponsored contest was founded by Maggie Gowan, who noted a steady decline over the last 20 years of commissioned photo stories about Britain. "The media rarely cover British life comprehensively; it's all too often about celebrities or stories from overseas, rather than the spirit of daily British life," says Maggie. Caroline Metcalfe, competition judge and former director of photography at Condè Nast Publications, couldn't agree more: "I have long felt that photography of 'British life' has been a neglected area. Photographers besiege photo editors with requests to shoot stories in all corners of the globe, in search of 'amazing', 'enlightening' and 'incredible' images of faraway places. At the same time, my inbox is full to overflowing with photo features from Indonesia to Iceland, via the Arctic Circle.

"There is a wealth of photographic material sitting right here at home, and the various categories in the British Life ">>>+

- **1)** Hounds from The Essex Hunt on a cubbing exercise as photographed by Paul Macneil.
- 2) Heather Buckley photographed this colourful couple at the Goodwood Revival in 2014.
- 3) This image of Birmingham City Centre at twilight was taken by Verity Milligan while on top of the Rotunda building.

 4) A climber hangs off the side of the Roaches in Staffordshire,
- 4) A climber hangs off the side of the Roaches in Staffordshire, photographed by Roy Riley for the Rural Life category.
 5) Janine Wiedel shot this image of a piebald Welsh Cob pony
- in a South London pub during the annual horse-trading event.
 6) Winner of the popular Portraiture award, Brian Harris took this of picture of poet Michael Hamburger MBE at his home.
 7) Shot at the 17th Century Hartwell House, in Aylesbury, this image by Rebecca Miller was highly commended.

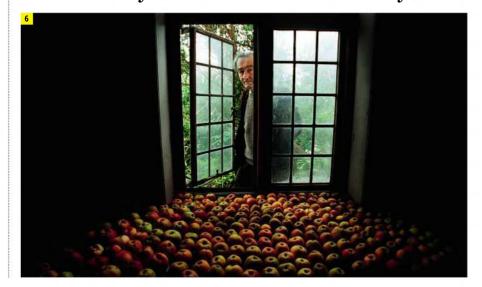








The photographs are broad and diverse, and reveal layers of life that speak louder than any words about our country





British Life Photography Awards











 John Sturrock's image of teenagers in 1987 won the Historic Britain award for celebrating life before mobile phones.
 Aview of London's Shard taken on a cold winter's daywon photographer Terry Wood the award for Urban Life.

3) Highly commended, this image of Big Ben in London being cleaned was taken by Naoufal Selmani.

 $\textbf{4)} Steve \, Morgan \, won \, the \, Work \, in \, the \, Community \, category \, for \, this \, image \, of \, Foundrymen \, in \, West \, Yorkshire.$

5) Heather Buckleywon the Brits on Holiday category for this image of friends on Brighton Pier in 2014.

6) Taken on a smartphone, this image was shot by Ansa Gohar while looking up at the buildings of More London Riverside.

"The entries have been humorous, quirky and serious and the portraits reveal the wide selection of people that make up Britain"

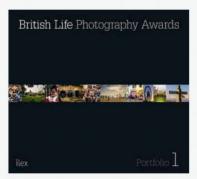
Photography Awards are testament to that. The photographs are broad and diverse, and reveal layers of life that speak louder than any words about our country."

The competition was divided into ten categories including Rural Life, Portraiture, Fashion and Street Life. It was judged by a diverse ten-strong panel, comprising picture editors, magazine editors – including *Digital SLR Photography* editor Daniel Lezano – and photographers David Leveson and Lara Jade, but it was an unanimous vote for the winner – professional photographer David Yeo for his image 'Vroom with a View'. The image showed a green caravan under a chestnut tree in Gloucestershire; a scene described by judges to be "quintessentially British". David won a Sony X9 4K 55in

television and an A7S full-frame camera with Zeiss FE 24-70mm lens. The other category winners won a Sony digital camera – part of a prize fund worth more than £10,000!

"We've had some superb entries, especially in the fashion and portraiture categories, and some interesting submissions to Street Life, in particular." says Maggie. "The entries have been humorous, quirky and serious and the portraits are revealing of the wide selection of people that make up Britain."

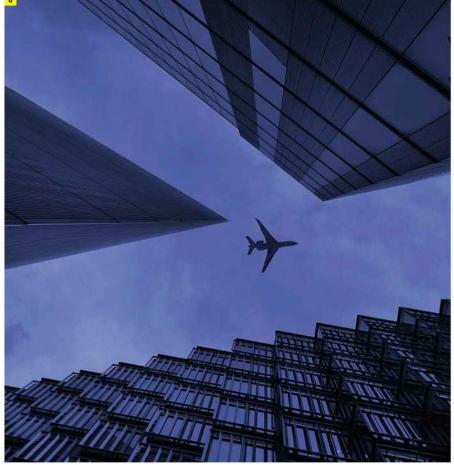
The competition has been accompanied by a book [see right] and travelling exhibition, which showcased more than 100 of its images at the Mall Galleries, in London, and is expected to have more dates released soon. Entries for next year's competition are due to open July 2015. www.blpawards.com



The BPLA book

British Life Photography Awards Portfolio 1, published by The Ilex press, includes the winners and commended entries from 2014, with hundreds of eye-opening images giving a thought-provoking, beautiful and refreshing view of life in the UK today. To purchase the book visit. http://amzn.to/1B1aN1t







OVERALLWINNER

David Yeo

FASHION & COMMERCIAL PHOTOGRAPHER

"A friend told me about the competition and I liked the idea of putting my own slant on what British photography meant to me. It was a great opportunity for photographers of all different genres and diverse backgrounds to share stories and perspectives visually on what they saw best represented British life.

"My entry was taken while on a commissioned shoot for British Vogue; it was part of a feature called 'Vroom with a View' about stylish girls with customised trucks and trailers. The series was shot in different locations, but this image was taken in Kemerton, Tewkesbury, and is a portrait of singer/songwriter Christina Kulukundis who liked to get away to the countryside in her caravan to write songs. Christina said the caravan was her 'optimum creative environment'. It's a 1972 Abbey caravan and, in my mind, it speaks of the fun side of British life, the charm of the countryside and our unique way of doing things a bit different, unusual and cool. It seemed an appropriate image to enter in to the competition. I love how the caravan sits in perfect harmony with the countryside under the blossoming horse chestnut tree, how Christina is looking out of the window and is surrounded by sheep – it conjures the allure of the countryside. I also love the merging of the caravan's colours with those in nature as it adds another dimension to the many shades of green in the scene. I shot the image using a 503CWD Hasselblad Digital Back and lit it with Profoto lighting, which was bounced inside the caravan.

"As with most good photographs, it's rarely just about the skill of the photographer alone but a combination of things all coming together at the right time. This was one of those times with the picture editor, the sittings editor, the subject, the location, the hair and make-up, great photographic assistants plus a whole load of patience. It shows that when a team works well together, good things happen." www.davidyeo.co.uk

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The Big Interview

SOPER BUNISH

WHAT WOULD A 16TH CENTURY SUPERMAN WEAR? OR WHAT IF THE HULK WAS A DUKE? JORDAN BUTTERS SPEAKS TO PRO PHOTOGRAPHER SACHA GOLDBERGER ABOUT HIS SUPERLATIVE PROJECT THAT REFORMS MODERN FANTASY FIGURES

Words: JORDAN BUTTERS

ARIS-BASED COMMERCIAL photographer Sacha Goldberger is no stranger to tackling the unusual. Driven by his own curiosity, his personal projects are often easily identified by their high production value, tongue-incheek humour and no-expense-spared execution. You might remember him from his Super Mamika series, which thrust Sacha's then 91-year-old grandmother into the limelight as the fictional superhero, Mamika. "With my Super Mamika series I explored the idea that anybody could be a superhero, even my grandmother," Sacha explains. "Then, three years ago, I created a series of portraits of girls and animals inspired by 16th Century Flemish paintings. In doing so I studied the Flemish style of portraiture intensely and learnt a lot - from the background to the costumes, the poses, expressions and lighting -I examined and replicated everything in great detail."

While on the look out for a new project, Sacha was approached by the prestigious School Gallery in Paris and asked to put together a collection of work for an exhibition. After some consideration, Sacha had the idea of imagining what popular 20th Century superheroes would look like if they'd been around during the 16th Century. Combining the aesthetics, ideologies and perceptions of two points in time and

two very different cultures, with Sacha's high-end execution, *Super Flemish* was born. Spanning cultural gaps, this project appeals to a wide range of people – from highbrow art admirers perusing pristine Parisian galleries to your average comic book fan discovering the series on any one of the countless international news websites that the series has graced. After all, who wouldn't want to see Darth Vader lovingly petting an ATAT puppy, Ironman posing patiently for a painter's brush strokes or the Hulk in a ruffled collar looking pensively at the ground?

Sacha loves to play with juxtaposition. You only have to look back at Super Mamika to see that his perfectionist approach to answering unusual 'what ifs' guarantees intriguing results. "I enjoy mixing things that don't belong together," he reveals. "We're used to seeing these American cultural icons as tough, strong characters on the silver screen. They are elevated to a higher status than those around them. But when you mix them with the European romanticism of Flemish paintings, there's a lot of contrast at play. I love the contradictions between the superhero and humanity, sci-fi and art, invincibility and mortality, physical strength and quiet contemplation. These strong characters expose their vulnerable side when presented in pensive poses, period outfits and soft lighting."



ITH SO MANY POTENTIAL characters to pick from, the first challenge for Sacha was choosing which superheroes to portray, a hurdle that was surprisingly easy to overcome. "I believe that it's important to take on projects that reflect the things that you enjoy," he explains. "I love the graphic nature of superheroes, and I chose my favourite incarnations of my favourite characters for this project, many of which came from my childhood. For Superman, it had to be Christopher Reeves - he was the best in my opinion, and I chose to do the old Hulk, rather than the latest version. There were some compromises: I wanted to use Batman from the 70's TV show to match the 70's Robin that we found, but we couldn't find the right actor, so we settled on a Christian Bale look-alike. The Joker was a tough choice for me - Jack Nicholson is my favourite Joker but Heath Ledger's portrayal was legendary, so I went with that one. Also, I'm a massive Star Wars fan, so I knew I had to include some of the best characters from that saga, too."

It's one thing coming up with a unique take on popular culture and making it a reality, but it's Sacha's flawless execution that demands admiration here. This is further amplified when you understand that 90% of what you see in *Super Flemish* is real – the costumes, the make–up and the people. It certainly wasn't the easy route, but if you're familiar with Sacha's work you'll already know that he's not one to do things by halves. *Super Flemish* took two

years and a team of over 110 people to see through to completion. "The problem with a project like this is that it can look fake very easily," Sacha explains. "I didn't want to make it look like we had found a bunch of look-alikes and put them into bad party costumes - I wanted it to seem as if we had the real actors from the movies. We had to cast the right people and create the costumes from scratch. From my previous Flemish work I already knew a lot about the right fabrics and textures to use, but with this project I had to strike the balance between new and old. Take Wonder Woman for example: her character is very strong and sexy - she wears small hotpants and a lot of make-up; the polar opposite to the style in the 16th Century. Without those characteristics she doesn't look like Wonder Woman, but go too far and she doesn't fit in with the Flemish style - it was very difficult to find the right balance."

Sacha enlisted the services of French costume designer Jackie Tadeoni and her team of five dressmakers to expertly sketch out and then create the handmade costumes for the project. They carefully selected period-true fabrics, while he and his casting director went in search of finding the right people to fill them. A call out on social media and he was soon inundated with applicants: "We had applications from look-alikes from all over France – it was a stringent selection process that took around eight months in total. We wanted to get as much right in camera as possible, with minimal CGI or Photoshop. Some of the people that we

Inset above: French designer Jackie Tadeoni's sketches of the costumes she was to create from scratch for Sacha.

found looked remarkably similar to their characters, and some we had to compromise on. The lady who played Princess Leia only had hair and make-up done. Others, such as the Hulk and the Joker involved hours in make-up and applying prosthetics, much like the actors would have had on set. We only resorted to Photoshop when there was no other choice – we would warp the mouth or nose slightly and sometimes that's all that it would take. Superman had the most Photoshop work done as the guy didn't end up looking like Christopher Reeves."

With the cast taking shape it was Sacha's turn to apply his expertise as a professional photographer to achieve the right lighting, pose and look for each image. Mimicking the 16th century Flemish painters, Sacha used heavily diffused side lighting.















"It took a lot of time and effort because when you exhibit your images you open yourself up for criticism"

"The lighting in Flemish portraits is very consistent, and it's something that I studied in detail. I wanted a chiaroscuro effect: lots of shadow, but not too dark, so alongside a large, diffused key light I used a second, diffused light on the opposite side to gently fill in the shadow detail. Of course lighting varies so much from person to person and what works for one face doesn't for another, so I would adjust my set-up slightly for each new character. I gave each subject direction on their pose and posture - the subjects in Flemish paintings are very straight and pensive. The exception was the Joker - he slipped perfectly into character and was acting like a mad man on set. I love how his pose turned out - it's more the Joker than Flemish, but it works well."

With so much time and effort having gone into the project, asking Sacha to pick his favourite image is like asking a father to single out his favourite child, but I push on all the same. Surprisingly, he's quick to answer: "I actually have three favourites that I have displayed in my house. The first is

the Joker. The second is Catwoman as it was the first portrait that I shot – I love the image of her looking down at the ground peacefully. Finally, the Hulk – I love the contrast between the strength of the character and the weakness and emotion revealed in the image."

Sacha's incredible attention to detail has paid dividends yet again, with Super Flemish a roaring success both with the gallery and in the mainstream media. There's now talk of further exhibitions in the pipeline, as Sacha intends to take the collection overseas and possibly publish a very limited edition collectors book, too. "Finishing the project was a great feeling," Sacha says with a sigh of relief. "It took a lot of time and effort because when you exhibit your images you open yourself up for criticism. I always try and do things better than the time before but I really enjoy the process of making something the best that it can possibly be - it excites me. I would consider myself a perfectionist." To see more visit: www.sachagoldberger.com





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NIKON D5500

A NEW, LIGHTWEIGHT AND COMPACT ENTRY-LEVEL DIGITAL SLR WITH A TEMPTING SPECIFICATION AND SOME NEATTRICKS UP ITS SLEEVE



Plus

GEAR NEWS: The latest product and gear news, hot off the press *Page 104* **PREMIUM FLASHGUNS:** We test seven of the best flashguns priced over £200 *Page 110* **FUJIFILM X100T:** Does this third-generation compact live up to the hype? *Page 119*



SHOW REPORT

THE LATEST PRODUCTS, SPECIAL DISCOUNTS AND EXPERT TALKS – THE 2015 PHOTOGRAPHY SHOW AT THE BIRMINGHAM NEC HAD ITALL

THE SECOND PHOTOGRAPHY Show at the Birmingham NEC offered the British public the chance to see the latest products, snap up exclusive discounts and gain expert advice from leading professional photographers. The *Digital SLR Photography* team visited the show and enjoyed meeting readers, contributors and members of the photo trade, as well as trying out some of the latest kit. Here's some of our highlights...

Manfrotto boasted the show's largest stand, as well as arguably the most outgoing and cheerful team. This might have something to do with them having several new products announced at the show, including bags, tripods, heads and LED lights – see below for further details.

Lytro was demonstrating its innovative ILLUM camera (3), which uses light field technology to capture images that allow you to adjust depth-of-field after the image has been taken. We witnessed several sceptical photographers change their opinion following an explanation and the chance to try the camera for themselves. We'll be reviewing the Lytro ILLUM soon.

This was the first time that Western Digital had exhibited and their stand was permanently crowded, as visitors had the chance to examine WD's extensive range of external drives and servers. It was the My Passport Wireless drive, which can transfer images via WiFi as well as SD card, that was incredibly popular as was the variety of Cloud



storage options. Its star was the My Cloud NAS two- and four-bay systems that offer the ultimate in reliable, secure storage.

Canon's chipboard stand (2) aimed for an urban appeal, but had a mixed reaction – we heard some state that the display looked like it hadn't been completed in time for the show! That didn't stop Canon's staff from being swamped by those looking to check out the new Canon EOS 5DS duo and the new EOS 750D. EOS 760D and EOS M3 models.

Nikon's stand offered the chance for the public to try out a vast number of Nikon products, including the new Nikon D7200 (see opposite page). Talks from leading Nikon Ambassadors, including Kirsty Mitchell and Kate Hopewell-Smith were very popular. Regular contributor Ross Hoddinott (1) was there each day, too, providing one-to-one advice and expert critique of visitors' images.

Olympus not only had presentations as well as the chance to try its latest models, but also offered tongue-in-cheek free massages for DSLR users tired of carrying heavy kit.

Several other major brands had big stands and lots of products to try, including Fujifilm, Samyang, Tamron, Panasonic, Sigma, Elinchrom and Bowens, although notably Pentax and Samsung were absent.

Finally, we spotted a significant trend in that several stands were demonstrating 'drones' that can shoot aerial stills and HD video. It will be interesting to see how this area develops over the coming years.







A selection of goodies from Manfrotto

MANFROTTO HAS ADDED several products to its range of bags, tripods and accessories, many of which were on view at the show. One of our favourites is the £170 Off Road 30L Hiker backpack, designed for those who enjoy both hiking and photography. It features a fully removable internal case designed for maximum protection and an innovative solution for keeping the camera secure on the chest whilst walking. With long treks in mind, the bag boasts a breathable back system with water-repellent fabric and thick, padded straps.

Manfrotto's 190-series of tripods (4) has a strong reputation and is bolstered by the addition of the enthusiastically-name £160 190 go! model. It's the lightest and most compact aluminium tripod in the 190 range,

weighing 1.7kg and folding down to 45cm. It can be raised to a maximum height of 146cm and features easy-to-use twist locks, as well as a smart 90° column and 500r-leg angles.

As fans of the original X-PRO, we're keen to check out the £170 X-PRO geared head – suited to macro and architectural use, offering fast and precise movements.

Finally, also announced is the LUMIE series of LED lights (5), offering excellent colour accuracy. Three are available: the £45 three-lamp Play, £70 six-lamp Art and £100 ten-lamp Muse. Each comes supplied with a filter holder, a selection of filters and a storage case.

We'll be testing a selection of these new Manfrotto products soon. www.manfrotto.co.uk







Flagship DX Nikon launched

NEW ENTHUSIAST-FOCUSED DSLR OFFERS AN IMPRESSIVE SPECIFICATION

NIKON HAS UNVEILED its new flagship DX-format digital SLR, the Nikon D7200. Offering a high level of specification, impressive image quality, great video capabilities and speedy connectivity, the new model has inherited a whole host of features from Nikon's FX-format models. For starters, the D7200 utilises an advanced Multi-CAM 3500 II 51-point autofocus system, derived from Nikon's professional bodies. This claims excellent low-light AF performance, capable of focusing accurately down to -3EV. There is also a wide ISO range (ISO 100-25600) to help further when light is very low. At the heart of the new D7200 is a 24.2-megapixel DX-format sensor, powered by the EXPEED 4 image processor, allowing for up to 6fps shooting in continuous burst. There's built-in Wi-Fi and, a first for a Nikon camera, Near Field Communication, giving you plenty of options for connecting, sharing and remote camera control. Video fans are well catered for, too, with Full HD 1080p30 recording (or 1080p60 in 1.3x crop mode), HDMI and audio outputs and a Flat Picture Control mode. There's no touchscreen or vari-angle monitor, but the 3.2in 1,229,000-dot LCD is crisp and as good as we've come to expect from Nikon. The new model is on sale immediately, coming in at £940 body-only, or £1,120 bundled with the NIKKOR 18-105mm f/3.5-5.6G VR lens. www.nikon.co.uk



Cashback offers

It's the time of year again when the big guns try to tempt you into a new camera body or lens with all sorts of tantalising discounts. Here's what's on offer:

- **NIKON:** Nikon's spring cashback offers are available until 31 May 2015 and are mainly focused on lenses, with up to £275 cashback available on select models from its excellent optics range. There's also up to £150 bonus cashback, battery grips or training courses if you combine a select Nikon lens and DSLR. **www.nikon.co.uk/promotions**
- Canon: Canon's spring offers run until 5 June 2015 and are spread across the gamut of its imaging range, with up to £250 cashback on select DSLRs, £165 cashback on certain lenses, £50 cashback on Powershot compacts, £80 on select LEGRIA camcorders and up to £100 off some models of PIXMA printer. ww.canon.co.uk/springcashback.

CANON PITCH 4K

While we've no news of this reaching UK soil yet, Canon China has announced the launch of a new 'small' 4K-capable model boasting a 1in CMOS sensor and 10x optical zoom f/2.8-5.6 fixed lens. Images were up on Twitter within minutes of the announcement, featuring the new model and, rather bizarrely, action star Jackie Chan endorsing it! The compact camera looks to be Canon's take on the action/drone camera market and features a rotating grip a feature that could work very well indeed! Fingers crossed we get to see this in Europe soon!

NEW LUMIX LENSES

Panasonic has announced two new lenses for its Micro Four-Thirds cameras. First up is the new Lumix G 30mm f/2.8 Macro OIS, offering users an equivalent 60mm close-up optic, ideal for photographin minute detail. It feature



ideal for photographing subjects in minute detail. It features Mega Optical Image Stabilisation and 240fps drive autofocus. Also new is a 42.5mm f/1.7 OIS portrait prime lens. It promises to offer brilliant, smooth bokeh with its equivalent 85mm focal length. We've no news on pricing as yet, but both new lenses are expected this May. www.panasonic.co.uk



NIKON D5500

Nikon's new baby is tiny and light, with a touchscreen LCD, but is it big on performance and handling? We find out if it's small, but mighty!

Test: RICHARD HOPKINS

SPECIFICATIONS

Guide Price: £640 (body only) / Street Price: £640 |
Image sensor: APS-C CMOS (23.5x15.6mm) |
Resolution: 24.2-megapixels |
Maximum image resolution: 6000x4000 pixels |
AF points: 39 (including nine cross-type sensors) |
ISO range: 100-25600 |
Shutter speeds: 1/4000sec-30 seconds & Bulb |
Continuous frame rate: 5fps |
Built-in flash: Yes, GN12 (ISO100, m) |
LCD monitor: 3.2in (1,037,000-dots) |
Storage: SD (SDHC/SDXC) |
Size: 124x97x70mm |
Weight: 470g (including battery and card)

UDGING BY THE number of times Nikon has revamped its D5000-series DSLRs, you could be forgiven for thinking that maybe there was something wrong with them, as this is the fourth incarnation in only five years. But actually what Nikon has been doing is staying ahead of the game by making an already good camera just that little bit better each time. The Nikon D5500 sits in the hotly contested upper-entry-level class, where the technology is fast-moving and strong competition comes from all directions not only from arch-rival Canon with its hot new 750D and 760D combo, but also a whole raft of mirrorless models from most of the big electronics brands.

The D5500 plays things safe by keeping the best features of the previous D5300. These include the same class-leading sensor and EXPEED 4 processor, without an anti-aliasing filter to make the most of the 24.2-megapixel resolution; ISO range still runs from ISO 100-25,600; the excellent rear LCD is the same 3.2in articulating screen with 1,037,000-dots; the autofocus system retains 39 AF points; and it can still rattle along at a nifty five frames-per-second.

The biggest change is the LCD monitor, which is now touch-sensitive, bringing the D5500 up to date with rivals. Other modifications include better battery life (extended by 36%), a new 'flat' Picture Control that appeals to video users, and the on-board GPS has been dropped from the spec sheet, but Wi-Fi remains so it's easy to hook up to a smartphone.

Some other higher-end features are still missing at this price level, such as an in-body focus motor, so the D5500 cannot use older



lenses with screw-drive AF. It's AF-S lenses only, but in practice that's unlikely to be a problem. The pop-up flash has no commander mode to control remote flash guns, there is only one main control dial, and no top-plate LCD to confirm and adjust settings. These features are all available in the D7000-series cameras.

Anyone familiar with the previous D5300 (don't ask about the D5400, Nikon appear to have skipped that model number) will have noticed small tweaks to the control layout. What's less obvious from illustrations is the reduction in size and weight. Nothing too radical, and the Nikon D5000-series has always been quite trim, but when all these small changes add up, they do amount to a significant improvement in handling. And now with that touchscreen added too, this is one sweet machine to use.

In fact, when you first pick up the D5500, its petite size (124mm long) and light weight (470g inc battery) are the first things you notice, and it calls for a few comparisons. Mirrorless cameras are supposed to be substantially smaller and lighter than DSLRs, but one of the nicest handling CSCs is the Fujifilm X-T1, which is actually longer and only a feather lighter than the D5500. Looking back to film cameras that we often remember as far less bloated than DSLRs, the lightest 35mm film SLR ever made was the hugely popular Pentax ME Super, and that was 8mm longer than the D5500 and exactly the same weight with a roll of film. In today's market, compared to many small, fiddly CSCs on one hand, and some quite

hefty DSLRs on the other, the nimble Nikon D5500 strikes a very good balance. Much of the weight saving comes from extensive use of plastics in the construction, including a composite chassis, though it has to be said that the build quality is very high and the black finish is immaculate (the coloured-finish options tend to look more plasticky). The dials, buttons, switches and levers are all smooth and well weighted – good to the touch. It feels solid and robust, including the articulating screen that tilts up, down, forwards for the inevitable selfies, or closes inwards to protect the screen.

The touchscreen plays a big part in the improved handling, and it's far from a gimmick (if you were thinking along those lines). In effect, it basically opens up a large new area of real estate on the back, filled with virtual buttons to settings that might otherwise be harder to locate or frustratingly hidden in the menus. It's very sensitive and getting the measure of that is easy, though you need to be accurate. Those with chunkier fingers might prefer navigating with the more conventional multi-way controller, but they'd be missing out.

On performance, the Nikon D5500 does everything expected from a mid-range DSLR. That is to say; it will handle pretty much anything you can throw at it and come up smiling, with very few limitations. That's where we are with technology at the moment – with even quite modestly priced cameras sporting a standard of specification that was state of the art just a few years ago.

Exposure metering is handled by a



2,016-pixel RGB sensor coupled to sophisticated Matrix-pattern algorithms that are not easily foxed. Or there's good old centre-weighted metering available, and a spot option too. The autofocus system has 39 points, with nine of those the more sensitive and accurate cross-type. You can select a single AF point, or clusters of nine or 21, or have the camera select them automatically. Then there's Nikon's popular 3D-tracking of moving subjects, too.

There are three shooting rates: single shot, up to three frames-per-second, or up to five. The top shutter speed is 1/4000sec rather than the 1/8000sec of higher spec models, and flash sync is 1/200sec. There's LiveView of course, and full HD 1080p/60 video. A multitude of scene modes and special effects are included, such as toy camera, miniature effect, selective colour and HDR (JPEG only) – in fact, pretty much everything except auto-stitch panorama.

Then there's the sensor, made by Sony and probably the best APS-C format sensor currently available with 24.2-megapixels, sans AA filter. Running from ISO 100-25600, it's the same sensor as in the previous Nikon D5300 and it's also found in the current D3300 and D7200 cameras, too. With that many pixels and no AA filter to take the edge off sharpness, the D5500 is capable of stunning detail, as the test pictures show. The downside of no AA filter is moiré interference appearing in small patterns. such as some fabrics, or maybe roof tiles in a cityscape when regular lines in the subject clash with the neat lines of pixels on the sensor. This creates coloured swirls and artificial patterns that can be very distracting and hard to remove, but we had no problems in the review period. This is probably because high pixel counts reduce the need for an AA filter and 24-megapixels is about as high as it gets on APS-C.

TOUCHSCREEN LCD MONITOR

The Nikon D5500's rear LCD is the key to its new-found appeal. In additional to the usual stuff: 1,037,000-dot resolution and articulating every which way. including forward-facing for selfies, it's touch-sensitive. Tapping the 'i' icon bottom-right opens the door for easy access to all those settings you know are hidden somewhere in the menus, but struggle to find! In such a small camera, it effectively multiplies the space available for additional controls and transforms the whole user experience.



CLOSEST RIVALS

- **CANON EOS 750D & 760D:** Brand new, so attracting lots of attention, they're hardly big cameras, but larger than the D5500. The new 24-megapixel APS-C sensor has phase-detect AF pixels for improved performance in LiveView, plus a sophisticated 7,560-pixel metering sensor. Updated 19-point normal AF; 5fps frame rate; 3in articulating touchscreen LCD. The D5500 is £600 body-only but for an extra £50, the EOS 760D has a top-plate LCD, and an extra control dial on the back, instead of buttons.
- **PENTAX K-5 II:** Not so new, with only 16 million pixels, and superceded by the Pentax K-5 IIs (same camera, without AA filter) but the K-5 II is certainly a camera worthy of its heritage. Excellent performance at semi-pro level, and solidly put together with weather-proof seals at every corner. £600 body only.
- **CSC RIVALS:** Some compete on price, but are not direct rivals in what they do and the way they go about it. In terms of AF performance, they can't yet match the DSLR's phase-detect AF when it comes to tracking moving subjects.

VERDICT

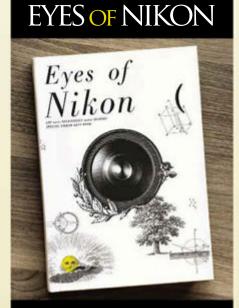
Regardless of its price or modest position in the Nikon range, not only does the D5500 deliver class-leading image quality, it does so with ease. The small size and light weight are seductive. The touchscreen LCD simply side-steps multi-function buttons and regular visits to the menus and makes the D5500 better, easier, faster, and just really good to use, and you get so much more out of the whole shooting experience.

0/100
18/20
18/20
18/20
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terminal: Operating power is supplied by the Nikon AC/DC Converter MA-2/MA-4. It is pictured here mounted to a Nikon F2A Photomic camera + MD-2/MB-1 motor Drive unit and is complete with two MZ-2 film cassettes. It is one of the rarest of all accessories made for the F2 and only the second one we have seen in 30 years. Mint.



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Premium flashguns

THESE TOP-SPEC FLASHGUNS FROM LEADING BRANDS BRING ADVANCED MASTER CONTROL FUNCTIONS, BIG POWER, AND HIGH-SPEED SYNC OPTIONS TO THE TABLE. BUT WITH PRICES FROM £200 TO £450, WHICH MODELS ARE THE BEST BUYS?

Test: RICHARD HOPKINS

WITH £200-PLUS in the flash budget, things start to get very interesting. It brings access to top-of-the-range models that include master/commander functions for fully automatic control of multiple remote flashes, and there's high-speed sync that allows shutter speeds above the normal X-sync limit to be used. These features can be found at lower prices too, including with the Yongnuo 568EX II (Best Buy in last month's budget flashgun review), but the pricier models come with more power, faster recycling, and a spec sheet of pro-grade extras.

The key to both of these advanced features, and to auto-TTL exposure control in general, is the IGBT technology that is common to all flashguns. It stands for Insulated-Gate Bipolar Transistor, and is basically a very fast switch that can turn the flash on and off extremely rapidly in a fraction of a millisecond.

This is used for exposure control, where the flash is simply switched off when enough light has been delivered. It is also used for remote control of slave guns, when the master unit puts out a series of Morse Code-like instructions by flashing repeatedly, so fast that it looks like one short flash to the human eye. These flashes are picked up by the slaves so they know when to fire, and how much light to give. Then there's high-speed sync, when the flashgun fires a constant stream of small flash pulses at an incredible rate while the shutter completes its full exposure cycle. These pulses are so close together that they appear like continuous light as far as the exposure is concerned.

Another benefit of IGBT technology is something of a side effect from the way the flash pulse is cut short to control exposure, as it results in very brief flash durations at low power settings. At 1/8 power for example, flash durations are typically down to 1/6000sec or so, reducing further to as little as 1/40000sec at minimum output. Perfect for freezing very fast action like bursting balloons or capturing water droplets.



HOW WE DID THE TESTS

POWER: Using our standard method of firing into a Lastolite 95cm Umbrellabox and reading full-power brightness at 1.0m, this gives an accurate and reliable measure of total light output that is directly comparable between all flash units.

It's exactly the same method used for our recent review of studioflash heads (issue 100, March 2015), expressed as an f/number at ISO 100 plus a decimal – for example, f/8+0.5 is exactly half way between f/8 and f/11. That figure would also equate to around 100Ws in studioflash terms.

RECYCLE TIME: An average of five full-power pops, using freshly-charged standard Eneloop Ni-MH batteries. Alkaline batteries are much slower, typically taking 50% longer. FLASH DURATIONS: Flash durations quoted by manufacturers are often the industry standard 't.5 time' but compared to real shutter speeds this is notoriously inaccurate. Here they were tested with a fast-spinning target, comparing results directly against ambient light images taken at high shutter speeds. This is a very reliable method up to 1/8000sec, the camera's maximum, though flashguns can run much faster than that at low-power outputs. As a rule of thumb with



flashguns, from around 1/4 power and less, the flash duration roughly halves every time the power output is halved.

LIGHT COVERAGE: The zooming action of the flash head improves efficiency by adjusting the angle of the light coverage to match the field-of-view of the lens (set in increments relating to full-frame equivalent focal lengths). At longer settings, this narrows and concentrates the beam, effectively making the flash brighter and increasing its range. Note that manufacturers' quoted guide numbers usually refer to the flashgun's maximum focal length, thus helping to flatter performance figures.

At shorter focal lengths, all guns struggle to get really even light coverage and corners are darker. Depending on the subject, it can pass unnoticed or even enhance the image with a slight vignette effect. The upside is that producing properly even coverage would mean a significant drop in overall brightness, so it's a fair trade-off.

OTHER FEATURES: Other key performance features to look out for include colour temperature (almost always very good, close to daylight), and with top-spec guns high-speed sync (HSS, or Auto-FP sync in Nikon-speak). Where relevant, we have covered this in the reviews.

FLASH TERMINOLOGY

- GUIDE NUMBER: A measure of flash brightness, that can also be used to calculate exposure when the flash is fired directly at the subject, based on the inverse square law (see below). Divide the Guide Number by distance to get the f/number for example, GN56 (ISO 100, metres) would give a lens aperture of f/5.6 at 10m.
- **E-TTL & i-TTL:** E-TTL is Canon's name for their auto-TTL flash system, and Nikon's is labelled i-TTL. They both work in pretty much the same way, with the same main features.
- PRE-FLASH: In auto-TTL mode, a pre-flash is fired when the shutter release is pressed, just before the shutter opens, and the metering system uses this to calculate exposure. It all happens very quickly indeed, just a few milliseconds, too fast for the naked eye to separate the pre-flash from the main flash that follows straight after.
- WIRELESS REMOTE FLASH: The days of long trailing sync cables are gone, as modern flash systems communicate wirelessly and fire in sync using light-code instructions (very fast Morse Code-like signals) or via radio instructions that are more reliable and have greater range.
- MASTER/COMMANDER & SLAVE: For wireless remote flash, the master unit (Canon) or commander unit (Nikon) sits on the camera and transmits exposure and sync instructions to the remote slave receiver flashguns.
- S1 & S2 SLAVE: S1 is a normal 'dumb-slave' feature, when the flashgun will fire in sync when it sees another flash firing. S2 mode is the same, but is programmed to ignore pre-flashes from the master unit and will only fire when it sees the main flash.
- HIGH-SPEED SYNC: HSS allows high shutter speeds, above the normal X-sync ceiling of focal-plane shutters (Nikon calls it FP-sync) that is limited to 1/200sec or thereabouts. Many top-end flashguns can do this, and it's invaluable for using flash in bright daylight, though effective power is inevitably greatly reduced so is best at close range.

 SECOND-CURTAIN SYNC: Normal X-sync fires
- SECOND-CURTAIN SYNC: Normal X-sync fires the flash at the beginning of the exposure, and second-curtain sync fires it at the end. This can create a more natural-looking effect with bright moving subjects, such as the streaks of light from car headlights that would then appear behind the car rather than in front of it.
- I.G.B.T: Stands for Insulated-Gate Bipolar Transistor, which is a very fast switch used to control power output in flashguns, while also delivering very short flash durations typically down to 1/30000sec at minimum power. Conventional studioflash works completely differently in this respect.
- BOUNCE FLASH: A popular technique for creating softer and more natural lighting indoors by pointing the flash at a white ceiling. The ceiling effectively becomes the new and much larger light source, bouncing soft light over a wide area. Light-toned walls can also be used.
- MULTI-FLASH MODE: In multi-flash or stroboscopic mode, the flashgun will rattle off a sequence of flashes at set intervals. A good trick for showing off your golf swing!
 INVERSE SQUARE LAW: One of the
- INVERSE SQUARE LAW: One of the fundamentals of flash photography, the inverse square law says that when the distance is doubled, the brightness of the light is reduced to one quarter a drop of two stops. Basically, flash brightness falls off much more quickly than you might think!

BUDGET FLASHGUNS: SUMMARY OF OUR HIGHLY RATED & BEST BUY MODELS

If you missed last month's review of leading budget flashguns, don't worry, here's our summary of the best models in our group test.



Gloxy GX-F990

• Gloxy GX-F990 £130: The Gloxy boasts a high specification, including high-speed sync, and it offers ample power too. It's a little heavy, but it's very well made and comes with useful accessories – all for a bargain price.



Canon 270 EX II

Canon Speedlite 270EX II £135: This Canon is small, light and surprisingly powerful. Its tilting head and high-speed sync mode gives it extra versatility. At £135, it's a great buy for a pocketable second flashgun.



Sigma EF-610 Super

Sigma EF-610 DG Super £150: A highperformance flash that is available in a wide range of camera fittings, for a fair price. It boasts impressive power, but its recycling times are unfortunately slower than we'd like.



Nissin Di700

Nissin Di700 £160: Well designed, offers extensive features and boasts decent power, all for a fair price. Control is handled mostly by the camera, which is good, but less convenient, and varies from brand to brand.



Yongnuo 568EX II

Yongnuo Speedlite YN568EX II £85: The Yongnuo's specification, build quality and performance are all top-drawer. This model has a good reliability record, and the price is just incredible.

MAIN FEATURES

- **1)** Fold-down wide-diffuser: Extends coverage with ultra-wide lenses
- 2) Rotating head: Tilts and swivels
- **3) Slave sensor**: Optical slave receiver for remote firing using another flash
- **4) AF-assist light:** Emits red beam for aiding autofocus in low light
- **5)** Battery cover: Requires AA batteries
- **6) Metal foot**: Hotshoe mount with locking collar for security
- 7) Stand: With 1/4in tripod bush underneath for mounting on stand
- 8) Tilt and swivel angles: Clickstopped at marked positions
- 9) LCD control panel: Full display of all functions and settings
- **10)** Panel light and custom functions: Illuminates LCD, doubles as CF access
- 11) Mode set: E-TTL & manual control
- **12) Sync options:** Sets high-speed sync and second-curtain sync
- **13)** Zoom head facility: Zooms head to match focal length setting
- **14) Sync port**: Standard 3.5mm jack sync socket (not on 430EX II)
- 15) Ready light: Flash ready light,
- doubles up as test button
- **16) Settings controller:** Selector toggle, plus confirm button
- **17) Pull-out bounce card:** Use for bounce-fill technique (not on 430EX II)





The Nissin Di866 Mk II is a modest update of the original Di866 that gained early popularity as a cheaper alternative to top-spec Canon and Nikon flashguns. Improvements include metal hotshoe foot and high-speed sync.

There's full auto-TTL operation, also a remote master controller, high-speed sync, second-curtain sync, and a sub-flash (the white window) for a dash of direct fill when bouncing. The zoom head covers 24-105mm focal lengths, down to 18mm with the wide panel, and there's a pull-out bounce card too. Head

rotation to the left, and no downward tilt. Separate sync and external power sockets, plus a USB firmware port will please keen strobist photographers. Settings are adjusted via a menu system with a colour LCD and a four-way controller, quite a novelty when first introduced, and it works very well – easy and logical.

Total light output measured f/8 +0.5, which is a decent slug of power, though less than GN60 suggests. The recycle time of four seconds at full power is a little slower than most, but a definite highlight is faster flash durations than average, with 1/700sec at full power, jumping up to 1/2600 sec at half, and 1/6000sec at quarter power.



flash durations are notably quicker.

Street price: £200

Guide number: GN60 at 105mm (ISO 100, m) Tested output: f/8 +0.5 max power Coverage: 24-105mm, 18mm wide-diffuser

Recycle max power: Four seconds High speed sync: Yes

Second-curtain sync: Yes

Flash durations (claimed): 1/300sec max

power, to 1/30000sec min power Tilt-bounce angles: 0-90° up

Swivel: 0-90° left, 0-180° right Modes: Auto-TTL, Manual, Multi-strobe

Remote modes: Auto-TTL master, Auto-TTL slave, optical slave

AFassist beam: Yes

Pull-out bounce card: Yes

Sync port: Yes

Firmware update port: Yes

Powersource: Four AA batteries

External power options: Yes

Dimensions: 182x75x58mm

Weight: 493q inc batteries (Ni-MH, 105q) Accessories: Ministand, soft case

Camera fittings: Canon, Nikon, Sony

Website: www.kenro.co.uk

0000 **Build quality**

0000 **Features**

0000 Performance

00000 Value

Overall 0000

Canon Speedlite 430EX II £210

Notably smaller than anything else at this level, and lighter too, the Canon Speedlite 430EX II lacks some features of the mighty Canon 600EX-RT, but it doesn't want for anything major.

The 430EX II lacks RT radio control of course, and neither can it play the master role, but it does feature full auto-TTL, slave operation, high-speed sync and second-curtain sync. Canon has left off a few other things in what seems like a bid to penny-pinch when the similar Nikon SB-700 has them, as do other flashguns at much lower cost – features like a pull-out bounce card, and a head that rotates a full 360° plus downward tilt. The head zooms

adds coverage for a wide 14mm lens, and it locks firmly in the straight ahead and straight up positions, which is nice.

Performance is impressive, with max power hitting f/8 + 0.3- slightly higher than expected from the guide number and only 0.4 stops less than the 600EX-RT. Even better, it recycles in two seconds to make it the fastest on test. Flash durations are typical, testing at shutter-speed equivalents of 1/400sec at full power, 1/1800sec at half power, and 1/4000sec at quarter power. Thereafter, durations roughly halve with every one-stop of power reduction.



and the price is right.

Street price: £210

Guide number: GN43 at 105mm (ISO 100, m) Tested output: f/8 +0.3 max power

Coverage: 24-105mm, 14mm wide-diffuser Recycle max power: Two seconds

High speed sync: Yes Second-curtain sync: Yes

Flash durations (claimed): Figure not provided

by manufacturer

Tilt-bounce angles: 0-90° up

Swivel: 0-90° left, 0-180° right Modes: Auto-TTL, Manual

Remote modes: Auto-TTL master and

Auto-TTLslave

AFassist beam: Yes

Pull-out bounce card: No

Sync port: No

Firmware update port: No

Power source: Four AA batteries

External power options: No Dimensions: 157x73x57mm

Weight: 424g inc batteries (Ni-MH, 105g)

Accessories: Ministand, soft case

Camera fittings: Canon only Website: www.canon.co.uk

00000 **Build quality** 0000 **Features** 00000 Performance Value 00000 **Overall** 00000



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CANON/NIKON FIT



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F/2.8 DI MACRO 1:1

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CANON/NIKON FIT



TAMRON AF 16-300MM

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The Nikon SB-700 looks to have all the main features of the top SB-910 model, it's a bit smaller and lighter too, and costs a handy £100 less. It's less powerful of course, half a stop, but that aside the SB-700 is very well-equipped with full Auto-TTL control including commander functions. There's high-speed sync, second-curtain sync, a zoom head that runs from 24-85mm plus 12mm wide diffuser and pull-out bounce card. Nikon includes an extra sophistication here, with flash coverage that can be adjusted either for maximum range but with some darkening around the edges, or less range but no un-evenness of exposure across the

frame, or the regular setting that's somewhere in-between. This is achieved by moderating the zoom head, as can be done manually with other guns, but it's a handy feature. Tilt is 90° up, 7° down, rotation a full 360° and it locks in the straight-ahead position. It comes with a nice zippered case, mini stand, colour effect filters and a diffuser cap.

Power output measured f/8+0.4, within a few tenths of the most powerful flashguns available, with fast 2.2-second recycle time. Flash durations checked out at a modest 1/400sec on full power, rising to 1/1200sec at half and 1/3500sec at quarter power.



Street price: £230

Guide number: GN28 at 35mm (ISO 100, m) Tested output: f/8 +0.4 max power Coverage: 24-85mm, 12mm wide-diffuser

Recycle max power: 2.2 seconds High speed sync: Yes

Second-curtain sync: Yes

Flash durations (claimed): 1/1042sec max power, to 1/40000sec min power

Tilt-bounce angles: 0-90° up, 7° down Swivel: 0-180° left, 0-180° right

Modes: Auto-TTL, Manual Remote modes: Auto-TTL master and

Auto-TTLslave

AFassist beam: Yes

Pull-out bounce card: Yes

Sync port: No

Firmware update port: No Power source: Four AA batteries

External power options: No

Dimensions: 170x70x58mm

Weight: 461g inc batteries (Ni-MH, 105g)

Accessories: Stand, case, diffuser cap, filters Camera fittings: Nikon only

Website: www.nikon.co.uk

Build quality 00000

Features 0000

Value OOOOO

Overall 00000

Metz Mecablitz 64 AF-1 £300

A big flashgun, and heavy too, just beating the top model Canon, Nikon and Nissin on size. Fully spec'd with all the usual high-end features such as Auto-TTL master and slave options, high-speed sync, second-curtain sync, multi strobe and optical slave.

What distinguishes the Metz Mecablitz 64 AF-1 is its touchscreen colour LCD control panel, with settings adjusted via a menu system, and also the little sub-flash that adds a bit of direct fill light when bouncing the main flash. That works well, though the touchscreen offers no obvious benefit over a normal four-way

rocker switch and you're not always certain if your touch has registered correctly.

The zoom head is pretty versatile, covering focal lengths from 24-200mm with a 12mm wide-panel and pull-out bounce card. There's a full range of movements apart from rotation limited to 120° on the right, with a lock straight ahead.

The very high GN64 power output is slightly misleading as it's taken with the zoom head at 200mm, but the tested output is still equal-highest at f/8 +0.9. A recycle time of 2.2 seconds is also very impressive for this much punch. Flash durations are notably slower though, testing at 1/300sec at full power, 1/800sec at half, and 1/1700sec at quarter power.



Street price: £300

Guide number: GN64 at 200mm (ISO 100, m) Tested output: f/8 +0.9 max power

Coverage: 24-200mm, 12mm wide-diffuser Recycle max power: 2.2 seconds

High speed sync: Yes

Second-curtain sync: Yes Flash durations (claimed t.5): 1/750sec max

power, to 1/40000sec min power Tilt-bounce angles: 0-90° up, 9° down

Tilt-bounce angles: 0-90° up, 9° c Swivel: 0-180° left, 0-120° right

Modes: Auto-TTL, Manual, multi Remote modes: Auto-TTL master,

Auto-TTL slave and optical slave

AF assist beam: Yes
Pull-out bounce card: Yes

Cura manta Van

Sync port: Yes

Firmware update port: Yes Power source: Four AA batteries

External power options: Yes Dimensions: 202x76x59mm

Weight: 533g inc batteries (Ni-MH, 105g) Accessories: Ministand, soft case

Camera fittings: Canon, Nikon, Pentax, Sony Website: www.intro2020.co.uk

Overall	00000
Value	೦೦೦೦
Performance	0000
Features	0000
Build quality	0000

Nikon SB-910 Speedlight £340

Nikon's top model, taking over from the SB-900, with the main differences being a revised control interface now similar to the SB-700, and improved thermal protection that slows the recycle time when the flash gets too hot, instead of just cutting out. It's a valuable feature when using repeated shots at high power as is often the case when bouncing or in high-speed sync mode.

The specification is very thorough, as you'd expect, with master/commander modes (using light-code, not radio), remote slave, high-speed sync and second-curtain sync.

The zoom head is fully featured, covering 17-200mm plus 14mm with the wide diffuser, there's a pull-out bounce card and movements everywhich way from 90° up, 7° down, full 360° rotation that locks straight ahead and straight up. Excellent, and like the SB-700, it comes in a zippered case with mini stand, colour-correction filters and a Stofen-style diffuser cap.

Power output measured at f/8 +0.9, equal best with the Metz 64 AF-1. In studio flash terms, that's around 120Ws equivalent. Recycle time of 2.4 seconds at max power is pretty swift and flash durations are typical, with shutter speed equivalents of 1/400sec at full power, reducing to 1/1500sec at half, and 1/3500sec at a guarter.



Nikon yet, though that's reflected in a

reasonably fair price, all things considered.

Guide number: GN34 at 35mm (ISO 100, m) Tested output: f/8 +0.9 max power Coverage: 17-200mm, 14mm wide-diffuser Recycle max power: 2.4 seconds High speed sync: Yes Second-curtain sync: Yes Flash durations (claimed): 1/880 sec max power, to 1/38500sec min power Tilt-bounce angles: 0-90° up, 7° down Swivel: 0-180° left, 0-180° right Modes: Auto-TTL, Manual, multi Remote modes: Auto-TTL master, Auto-TTL slave and optical slave AFassist beam: Yes Pull-out bounce card: Yes Sync port: Yes Firmware update port: No Powersource: Four AA batteries

External power options: Yes

Dimensions: 197x77x58mm

Camera fittings: Nikon only

Website: www.nikon.co.uk

Weight: 522g inc batteries (Ni-MH, 105g)

Accessories: Stand, case, diffuser cap, filters

Overall	00000
Value	ପପପପ ା
Performance	00000
Features	0000
Build quality	00000

Nissin MG8000 Extreme £350

The top-spec Nissin MG8000 Extreme has a unique and potentially invaluable feature – it's virtually immune to over-heating. The specially designed Quartz flash tube sits in a large and well-vented zoom head, and Nissin claims it will handle 200 consecutive full-power pops without batting an eyelid! That's a heck of a lot, and Nissin claims about three times more than other flashguns. After 200 flashes, the recycle time automatically doubles but it will then go on pretty much forever, with external power options available to take it there.

The only downside is the zoom head design excludes the usual pull-out bounce card and wide-angle panel (there's a clip-on diffuser instead).

Otherwise, the head movements are the same as the Nissin Di866, as are most other features like the sub-flash and LCD control panel with four-way controller. Then there's the usual compliment of high-end features, including remote master and slave functions, high-speed sync, second-curtain sync, multi-strobe and so on.

Output measured a high f/8 +0.8 on full power, with a respectable recycle time of 3.2 seconds. Flash durations were on-par, with 1/400sec at full power, 1/1650sec at half, and 1/3500sec at quarter power.



and very capable flashgun.

Street price: £350

Guide number: GN60 at 105mm (ISO 100, m) Tested output: f/8+0.8 max power Coverage: 24-105mm, 18mm wide-diffuser Recycle max power: 3.2 seconds

Recycle max power: 3.2 seco High speed sync: Yes Second-curtain sync: Yes

Flash durations (claimed): 1/300sec max power, to 1/30000sec min power Tilt-bounce angles: 0-90° up

Swivel: 0-90° left, 0-180° right Modes: Auto-TTL, Manual, multi

Remote modes: Auto-TTL master, Auto-TTL slave and optical slave

AF assist beam: Yes
Pull-out bounce card: No

Sync port: Yes
Firmware update port: Yes

Power source: Four AA batteries External power options: Yes Dimensions: 193x79x59mm

Weight: 531g inc batteries (Ni-MH, 105g)
Accessories: Stand, case, wide-angle diffuser

Camera fittings: Canon, Nikon Website: www.kenro.co.uk

Canon 600EX-RT £450

The Canon Speedlite 600EX-RT was the first flashgun to include integral radio Auto-TTL control of remote flashguns. Radio Auto-TTL with add-on triggers is common place, and very goodand surprisingly affordable it is too, but nothing beats built-in radio for convenience and reliability. There are no line-of-sight problems or misfires in bright ambient light with radio, and with the 600EX-RT there's no messing about with separate triggers and batteries or cables either. You can literally just put them up, switch on, and shoot. Fantastic. The Canon 600EX-RT also has normal light-code remote mastering.

The rest of the spec is top-drawer. High-speed sync, second-curtain sync and multi-strobo modes, a zoom head that runs from 20-200mm and down to 14mm with the fold-down wide-panel, plus a bounce card. There's 90° upwards tilt, 7° down, full 360° rotation, with locks straight up and straight ahead. If there's a feature available, you can be sure the Canon 600EX-RT has it. Build quality is very high, including weather-resistance such as the boot that surrounds the hotshoe.

Power output measured a fairly decent f/8 +0.7, with a more than respectable recycle time of 2.9 seconds. Flash durations are in line, measuring 1/400sec at full power, 1/1400sec at half, and 1/3200sec at quarter power.



Street price: £450

Guide number: GN60 at 200mm (ISO 100, m) Tested output: f/8 +0.7 max power Coverage: 20-200mm, 14mm wide-diffuser Recycle max power: 2.9 seconds

High speed sync: Yes Second-curtain sync: Yes

Flash durations (claimed): Figure not provided

by manufacturer

Tilt-bounce angles: 0-90° up, 7° down Swivel: 0-180° left, 0-180° right Modes: Auto-TTL, Manual, multi

Remote modes: Auto-TTL master and

Auto-TTL slave AFassist beam: Yes

Pull-out bounce card: No

Sync port: Yes

Firmware update port: No Powersource: Four AA batteries

External power options: Yes

Dimensions: 194x79x60mm

Weight: 533g inc batteries (Ni-MH, 105g)

Accessories: Stand, case, filters Camera fittings: Canon only

Website: www.canon.co.uk

00000 **Build quality**

00000 **Features**

00000 Performance

000 Value

Overall 00000







Nikon SB-910



Canon 600EX-RT



Canon 430EX II



Nikon SB-700

CONCLUSION

Which is the best premium flashgun? That's easy – Canon's Speedlite 600EX-RT. It has a total specification, performs brilliantly, and has great build quality, including weather-resistance. But its only real advantage over the Nikon SB-910 is radio remote control, and for that the price jumps up to a not inconsiderable £450. And the Nikon, though excellent too, is not exactly cheap either at £340. Both have to score Highly Rated though.

It's their little brothers that do best overall when taking value for money into account. The Canon 430EX II and Nikon SB-700 are substantially cheaper at £210 and £230 respectively, but don't lack for anything much in either in terms of features or performance, plus they're smaller and lighter, with faster recycle times. To be fair, the Canon 430EX II doesn't offer remote control mastering which could be a deal-breaker, but that aside, both contenders perform very well indeed and both are worthy Best Buys.

The Nissin Di866 II also deserves a Highly Rated recommendation too. Granted, it lacks a few refinements, but has plenty of power, is easy to use with the colour screen and menu system, and it offers notably faster flash durations than any other flashgun on test here. The recycle time is a little slower at full power, but at the lower settings you're most likely to use most in practice, it's much faster. There's no doubting the price though, and that is the cheapest here at a more-than-reasonable £200.

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FUJIFILM X100T

Is Fujifilm's third-generation premium compact a worthy complement to your digital SLR? Let's find out...

Test: JORDAN BUTTERS

SPECIFICATION

Guide Price: £1,000 / Street Price: £969
Sensor: APS-C X-Trans CMOS II (23.6 mm x 15.8 mm)
Resolution: 16.3-megapixels
Maximum image resolution: 4896x3264 pixels
AF points: 49 (nine phase detection)
ISO range: 100-51200
Shutter speeds: 1/4000sec (1/32000sec electronic)-30 seconds & Bulb
Continuous frame rate: 6fps

Storage: SD (SDHC/SDXC) Size: 127x74x52 mm Weight: 440g (including battery & card)

Website: www.fujifilm.eu

HE FUJIFILM X100 is a cult classic. In the four years since its launch, the X100 has amassed a strong following of shooters looking for a carry-anywhere compact with image quality equivalent to their DSLR. The X100S followed in 2013, further improving on the principles of a big sensor in a small body. I rarely leave home without my X100S – it fits in a large pocket, feels weightless slung over my shoulder and its 35mm-equivalent lens is incredible. It has even replaced my DSLR for travel – less weight, less space, but the same image quality that I'm used to.

The new X100T is more of an evolution than a revolution of the X100S. Externally, there are subtle aesthetic differences – the scroll wheel on the back has given way to a less frustrating four-way control, and it now sports a larger, higher resolution LCD screen and a dedicated DRIVE button. The camera's layout has been simplified with less labels and provides huge scope for customisation. There's a new Advanced Hybrid viewfinder that combines an electronic and optical viewfinder into one – a feature that I loved on the Fujifilm X-T1.



Further improvements include an expanded ISO range (ISO 100-51200), Face Detection AF, Interval Timer and a new Classic Chrome film simulation. USB charging has also been introduced, and changes to aperture can be made in a third of a stop, as opposed to half-stops on the X100S. Finally, a silent electronic shutter mode has been added that can fire at 1/32000sec, allowing for shooting wide open in bright sunlight; although somewhat negating the built-in three-stop ND filter. The new model packs the same 16.3-megapixel APS-C X-Trans CMOS II sensor that I've come to know and love and there's the same fantastic 23mm f/2 lens and mechanical leaf shutter that allows for HSS at up to 1/4000sec.

As expected, the camera is a joy to use, although adjusting to the subtle differences takes time. The new viewfinder is incredible, particularly in tricky lighting. With the X100S I often use the electronic viewfinder with the exposure compensation dial for a real-time exposure preview but this method becomes unstuck when shooting with flash, requiring a quick switch to the optical viewfinder.

VERDICT

The X100T improves on the X100S's flaws and throws some new features into the mix. It's a powerful camera; but it's not cheap at just under £1,000. Can the cost be justified? As an X100S user, it's not quite enough to sway me, but if I owned the original X100 or was new to the Fujifilm market, then the X100T would be my first choice.

Build quality	00000
Features	೦೦೦೦
Performance	೦೦೦೦
Value	೦೦೦೦
Overall	೦೦೦೦

The X100T solves this problem and allows you to see the real world at the same time as your exposure, along with all the relevant information. It even rotates when you switch orientation! The X100T's addition of Wi-Fi is one that I would have scoffed at a few years ago, but with the advent of social image sharing it's one that I miss most from my existing Fuji. There's now even an app that allows you to control and trigger the camera from your phone or tablet.





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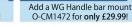
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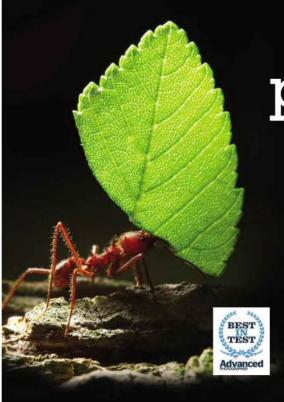
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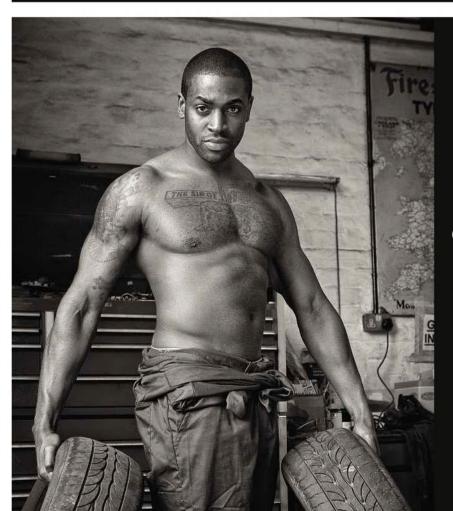




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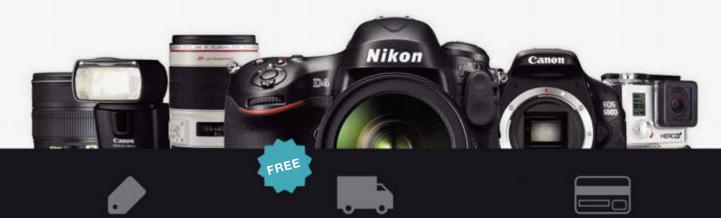
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Kenko 1.4x Pro 300DG VC600 (600Si)	£149 £29
Min 5200i	£49 £29
Min 5400HS Min 5600HSD M-	£69 £129
Min 1200 Ringflash NIKON DIGITAL AF L D4s body box	£69 ISED
D4s body box £	3799 2999
D3X body box £	1999
D4s body box	£299
D700 body box£599)/799 6800
D600 body box	£749
D300 body box	£299
D7100 body D7000 body box	£499 £369
D5100 body D5000 body	£249

iti	ion and to bu	y seco	ndhand	stock.	6	M
9	D3100 body	£149	TOK 16-50 F			
9	D90 body MBD-11		TOK 80-400 FLASH / AC			
)	MBD-14 M- box	£169	SB-25£4	49 SB-80D	ΣXC	79
)	MBD-80		SB-700 bo SB-900			
)	MBD-200 Coolpix P500 box		SB-910			
9	Coolpix P7100 NIKON AF USED		SB-R200 b	ох	.£1	49
)	F5 body	6340	SD-8 box SD-8A batt			
9	F4S body	£199	DR-6 angle			
9	F100 + MB-15	£149	DR-3 angle	finder	£	269
)	F100 body F90x body	£149	MB-21 (fits MB-23 (fits	F4)	է գ	99
9	F801 body	£29/59	MB-40 (fits	F6)	£	99
)	F50/F55 body ead	ch £29	MC-30 rem	ote	£	39
)	F601 body 10-24 F3.5/4.5 AFS	DX£499	MF-23 (dat NIKON MI F2 + DP-1	e back F4) F USED	1	.19
)	12-24 F4 DX	£499	F2 + DP-1	blk	£1	99
)	14-24 F2.8 M- box 16 F2.8 AFD	£1099	F3HP body F3 body	y	£1.	99 40
9	16-85 F3.5/5.6 AFS	VR £299	FE-2 body	blk	£2	49
	17-55 F2.8 AFS D		FE-2 body			
)	18-55 F3.5/5.6 VR 18-105 F3.5/5.6 AFS V		FM2n bod FM2n bod			
9	18-135 F3.5/5.6 AF	S£149	FM body .		£	79
)	18-200 F3.5/5.6 AFS V 18-200 F3.5/5.6 AFS V		FG body			
)	24 F2.8 AFD	£249	FG20 body EM body			
9	24-50 f3.5/4.5 AF .	£129	24 F2 AIS.		£3	39
)	24-70 F2.8 24-85 F3.5/4.5 AF	£1099	28 F2.8 Al 28 F3.5 Al	S	.£1	39
9	24-120 f3.5/5.6 VF	R£299	35 F2.8 PC	;	.£1	99
9	28-80 F3.5/5.6 AF	G £49	35-70 F3.3	3/4.5 AIS	£	99
9	28-300 F3.5/5.6 AFS VR	£549	35-105 F3 43-86 F3.5	.5/4.5 AIS	. £ገ የ	19
9	35 F1.8 AFS DX M-	box £129	50 F1.4 Al	S	£1	99
)	35 F2 AFD box 35 F2 AF	£189	50 F1.8 Al	S S papaaka	£	89
)	35-80 F4/5.6 AFD.		50 F1.8 E.			
9	40 F2.8 AFS DX M	£149	50 F2 (F)		£	49
;	50 F1.4 AFS G 50 F1.4 AFD		55 F2.8 Al 55 F3.5 Al	S	£1.	49
5	50 F1.8 AFS G box	c£139	80-200 F4	.5 Al	£	99
9	50 F1.8 AFD box		105 F1.8 A	IS scruffy	£1	19
)	50 F1.8 AF 55-200 F4/5.6 AFS		105 F2.5 A 135 F2.8 E			
9	55-300 F4.5/5.6		180 F2.8 A	IS ED		
)	AFS VR DX 60 F2.8 AFS M- bo	£199	180 F2.8 A scruffy		01	oο
,	60 F2.8 AFD	£199	200 F4 AIS	3	.£1	49
9	60 F2.8 AFD 70-200 F2.8 VRII.	£1249	200 F4 AI.		£	99
;	70-200 F2.8 VRII. 70-200 F2.8 AFS	£799 VRI£799	TC14A TC200			
)	70-200 F4 AFS VI	R £799	DE-3 fits f3	box	.£1	29
9	70-300 F4.5/5.6	6200	SC-17 TTL SC-29 TTL	lead	£	25
9	AFS VR70-300 F4.5/5.6 A	£299 .FD., £99	DW-4 6x ma	g find fit F3.	£	.59
9	80-200 F2.8 AFS	box£649	PK-13 ext	tube	£	29
)	80-400 F4.5/5.6 AF 80-400 F4.5/5.6 V		PK-12 ext OLYMPUS	DIGITAL	Y	:29 ED
9	85 F1.4 AFD	£679	E300 body	·	£	69
9	105 F2 DC box 105 F2.8 VR M	£649	11-22 F2.8 14-42 F3.5			
)	105 F2.8 VR		14-42 F3.5			
	300 F2.8 AFS VRI		14-50 F3.8			
9	300 F2.8 AFS VRI 300 F4 AFS	£2899 £749	35 F3.5 40-150 F4	/5.6	ሂ	49
9	500 F4 AFS VR	£4999	50-200 F2	.8/3.5 ED.	£3	79
9	TC17EII box TC20EIII box	£249	70-300 F4, 25mm ext			
)	TC20E box	£149	FL-50 flash	າ	£1	
)	Kenko MC7	£69	OLYMPUS	PEN USE	ΞD	
9	SIGMA NAF USE 10-20 F4/5.6 HS		OMD E-M5 Pen E-PM1	+ 14-42 M-	ኒር	49
9	Mint box	£299	Pen E-PM	1 body	£	99
9	12-24 F4.5/5.6 EX DG HSM	6500	17 F2.8 45 F1.8		£1.	29 40
9	15-30 F3.5/4.5 EX		Pen VF2		£1	29
9	18-125 F3.5/6.3	01.10	MM3 adap	ter	£	99
9	HSM DC OS 18-200 F3.5/6.3	£149	OLYMPUS OM-2SP b	ody 69	9/1	4 9
9	DC box		OM-2n boo	dy chr M	£2.	19
9	24-70 F2.8 EX 30 F1.4 EX DC		OM-2n boo			
9	50 F1.4 DG Mint		OM-2n boo OM-2 chr l	oody	.Σ1	29
9	50 F2.8 EX DG	£139	OM-1N bo	dy chr	.£1	29
9	70-300 F4/5.6 mac 80-400 F4/5.6 APO		OM-1 body	y chrome	.£1	29
9	105 F2.8 EX	£239	OM-4 Ti bo OM-4 Ti bo	ody blk	.£2	49
)	120-400 F4/5.6 DG	OS £499	OM-4 body	/ blk	.£1	39
)	150-500 F5/6.3 HSI 170-500 F5/6.3 DG	£349	OM-40P b OM-10 bo	ouy dy chrome	£	49
9	300 F2.8 EX DG	£1349	24 F2.8		£1	69
9	1.4x EX DG M 1.4x EX conv		28 F2.8 28 F3.5		£	49
)	2x EX DG conv	£159	28-48 F4		£	99
)	TAMRON NAF US	SED	35-70 F3.5	6/4.5	£	79
9	17-35 F2.8/4 17-50 F2.8 XR Di	£169 £199	35-70 F4 35-105 F3.	.5/4.5	£	.79 79
)	18-200 F3.5/6.3 XF	R Di£99	50 F1.4		£	99
9	18-250 F3.5/6.3 Dill 18-270 F3.5/6.3 P2		50 F1.8 50 F3.5 ma			
)	24-135 F3.5/5.6 bd		135 F2.8			
9	90 F2.8 Di box 9	£249/299	180 F2.8		£2	99
9	90 F2.8 150-600 F5/6.3 Di	£199 VC £779	300 F4.5 b F280 flash			
)	TOK 11-16 F2.8 ATX		T32 flash			

TOK 16-50 F2.8 ATX Pro TOK 80-400 F4.5/5.6 ATX.	£349 £249
FLASH / ACCESSORIES	IISFD
SB-25£49 SB-80D SB-700 box SB-900	X £79 ዮ199
SB-900	£269
SB-910 SB-R200 box	£279
SD-8 box	£49
SD-8A batt pack	£79
DR-6 angle finder DR-3 angle finder	£149
MB-21 (fits F4)	£99
MD 22 (fito E4)	670
MB-40 (fits F6)	.£99
MC-30 remote MF-23 (date back F4) .	£79
NIKON MF USED F2 + DP-1 blk	0100
F3HP body	£199
F3 body FE-2 body blk	£149
FE-2 body blk	£249
FE-2 body chr FM2n body chr FM2n body blk £199	£179
FM2n body blk £199	9/299
FM bodyFG body	. £79 . £49
FG20 body	£49
EM body24 F2 AIS	. £29
28 F2.8 AIS	£139
28 F3.5 Al	. £99
35 F2.8 PC 35-70 F3.3/4.5 AIS	£199
35-105 E3 5/4 5 AIS	C110
43-86 F3.5 Al 50 F1.4 AlS	£49
50 F1.8 AIS	£199
50 F1.8 AIS 50 F1.8 AIS pancake	
50 F1.8 E	£59
55 F2.8 AIS	£149
55 F3.5 Al	. £89
105 F1 8 AIS scruffy	. £99 £119
50 F1.8 E	£119
135 F2.8 E	. £99
180 F2.8 AIS ED 180 F2.8 AIS ED	£399
scruffy 200 F4 AIS	£199
200 F4 AIS 200 F4 AI	£149
TC14A	£129
TC200 DE-3 fits f3 box	£49
SC-17 TTL lead	£129
SC-17 TTL lead SC-29 TTL lead	£25 £39
SC-17 TTL lead SC-29 TTL lead DW-4 6x mag find fit F3	£25 £39 £99
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Man out tube 7714 66	
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Auto ext tube 14/25 ea	£2
PANASONIC DIGITAL	USE
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LX3 boxGH2 body	£11
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C2 hady blk	010
G3 body blk GX1 body sil/blk box	212
GX1 body sil/blk box	£14
GF1 body blk box	£7
GF2 body 14 F2.5 14-42 F3.5/5.6 PZ blk	£6
14 F2 5	613
14 40 F2 F/F 6 D7 hll	010
14-42 F3.5/5.6 PZ DIK	. 19
14-42 F3.5/5.6 PZ blk 14-42 F3.5/5.6 14-45 F3.5/5.6 14-140 F4/5.8 20 F1.7 MKII M- box 25 F1.4 Mint box 45-150 F4/5.6 45-200 F4/5.6 box FZ200 PENTAX DIGITAL AF I K20D body K10D body M10D body	£7
14-45 F3.5/5.6	£14
14-140 F4/5.8	£29
20 F1 7 MKII M- box	622
25 E1 / Mint hov	624
25 F 1.4 WILL DOX	. 2.04
45-150 F4/5.6	£16
45-200 F4/5.6 box	£19
FZ200	£19
PENTAX DIGITAL AF I	ISFI
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KZOD body	. 2.14
K TOD body	£9
DBG2 grip PENTAX 35mm AF 0 17-70 F4 SDM M- box	£6
PENTAX 35mm AF	USE
17-70 F4 SDM M- box	£34
10 EE E2 E/E 6	ວວ
18-55 F3.5/5.6 20-35 f4 box	ŁZ
20-35 f4 box	.£32
21 F3.2 AL Limited	£29
28-70 F4 AL	£5
28-80 F3 5/5 6	€4
20 00 10.0/0.0	2
26-90 F3.5/5.0 FA	LO
31 F1.8 Limited M- box	£59
35 F2.8 Limited	£29
20-35 f4 box	£24
43 F1 9 Limited M- box	630
FO 40F FO O CDM MA Is an	040
50-135 F2.6 SDIVI IVI- DOX	149
50-200 F4/5.6 WR	£9
55-300 F4.5/5.8 ED bo	x£22
70 F2.8 Limited	£34
70-200 F4/5 6	69
70 200 F4/F 6	20
70-300 F4/5.6	L1
43 F1.9 Limited M- box 50-135 F2.8 SDM M- box 50-200 F4/5.6 WR 55-300 F4.5/5.8 ED bo 70 F2.8 Limited 70-200 F4/5.6 70-300 F4/5.6 77 F1.8 Limited silv	£59
SIGMA PKAF USED	
8 F4 FX M- box	£19
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12-24 F4/5.6 EX DG Mint	£49
18-250 F3.5/6.3 OS DC	£19
105 F2.8 EX DG M- box	£32
TAM 17-50 F2.8 XR Di	£19
PENTAX 35mm ME	USF
I Y + priem	610
K1000 body obr	. 213
K1000 body chr	£7
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ACCESSORIES

Ball Head Heaven - set the preferred friction and lock in place. Once the desired friction is set the camera can be moved by a little extra pressure in any direction and from horizontal to vertical. The friction resistance remains constant, reliable and smooth and will not let the camera move on its own. It is oh, so easy.





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Ball Head Heaven - set the preferred friction and lock in place. Once the desired friction is set the camera can be moved by a little extra pressure in any direction and from horizontal to vertical. The friction resistance remains constant, reliable and smooth and will not let the camera move on its own. It is oh, so easy.

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VIDEO

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FILTER

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DARKROO*M*

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SCRAPBOOK







Ball Head Heaven – set the preferred friction and lock in place. Once the desired friction is set the camera can be moved by a little extra pressure in any direction and from to use



is set the camera can be moved by a little extra pressure in any direction and from horizontal to vertical. The friction resistance remains constant, reliable and smooth and will not let the camera move on its own. It is oh, so easy

Ball Head Heaven - set the

preferred friction and lock in

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DSLR RIGS & STEADY CAMERA DEVICES

KOOD RIG 3 SET

A complete set, with all necessary accessories and alternatives included and the most professional Matte Box 2 - KRLO3 Supplied in Alloy Trolley Case with extending handle

Comprises of KRLO3 Rig (as RLO4 below but with large battery pack holder)

C Bracket and over head carry handle on twin 19cm long rails for adjusting to exact centre of gravity



Follow Focus 4 – fast snap fit - with two flexible cable controls (plug in control knobs on flexible cables) 24cm and 38cm and a fast crank handle (provides 3 ways of operating - use knurled knob, speed crank or knob on flexible cable

Matte Box (see under matte box) 2 with C Bracket and Hinge ideal for all types of DSLR and high end video

KOOD RIG 001 SET

cross rod and clamp to hold the shoulder

pad rod and another cross rod. The block

has two 15mm 60mm apart clamps and a sliding quick release pad for the

a stiating quick release pad for the camera. Two 1.5mm dia. x 1.8cm length rods are provided – so all types of accessories can fit and it can also be converted into a two handle rig

KRL 001 set - as above with follow focus 1

support – fantastic value and very rigid –

(this enables all Follow Focus

and Matte Boxes etc) – without the attachment only the follow

can be used with standard twin 15mm dia. rod 60mm apart fitting with an extra attachment

focus F2 can be used

Twin fully adjustable handles

Big Lens support fully adjustable

This simple light

ria has a single

handle block

with a 15mm

KOOD DSLR Rig 1

A compreh

and versatile

pressed steel

rig providing

a stable platform

for video etc with

handles and shoulder

KOOD RIG 4 SET



Kood Rig 4 set is not packed in an alloy case, nor comprehensive accessories supplied, Matte Box 3 is Pro DSLR type with two filter carriers but does not swing to one side (details under matte boxes)

Shoulder Pad

20cm pair of rails

28cm pair of rails

Couple together to make 48cm twin rail

Sliding and lock camera platform, 3cm height adjustment, $\frac{1}{4}$ and $\frac{3}{8}$ tripod threads and a 13cm sliding and lock camera plate

29.5 cm cross rail with 2 x handles 360 degree adjustment on handles and on rail KF3 Follow Focus kit

KOOD RIG 002 SET



Camera Platform, mounted on 15mm dia. cross rail

2 handles 360 degree rotation and lock 19cm 15mm dia. rail and shoulder pad Shoulder pad has velcro strap for attaching battery packs etc

KROO2 set as above but with

Follow Focus 1

Matte Box 1

KOOD Rig 002 Plus set – as above

But with 90 degree curved 15mm rod and overhead carry handle

KOOD Follow Focus 00

All Kood Follow Focus units are supplied with Gear Belt

Basic unit with gear belt for standard 15mm dia. 60mm apart rods Adjustable height

Can be used both sides of lens but gear wheel cannot be reversed as with all other KOOD Follow Focus devices – nor can you use flexi knobs or speed crank

KOOD Follow Focus F1



Slip free gear driven from either side of the lens – gear wheel can be reversed Fits std 15mm dia. 60mm apart rods – fully adjustable

Focus indicator

KOOD Follow Focus F2



Same as F1 but separate L plate provided for fitting into the base plate of the camera

Can be used without a rig or with rig 1 by fixing directly to the camera as well as with all rigs that have standard twin 1.5mm dia rods 60mm apart

KOOD Follow Focus F3



Slip Free gear driven (can be used either side of the lens gear wheel can be reversed)

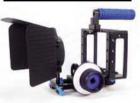
Adjustable stops and indicator
Use with std twin 15mm dia. rods
60mm apart

Same as F3 except that the twin

rail fitting is a snap fit adjust

Compatible to all DSLR/Video Cameras Easy mounting and adjust

Heavy Duty Alloy Cradles KOOD Follow Focus F4



KC1 for 5D2 and most cameras KC2 for 5D3 and most cameras

Mounting Block with twin 15mm dia. 60mm apart 18cm rods has $\frac{1}{4}$ and $\frac{3}{8}$ tripod

Cage has $34 \times 1/4$ female threaded holes – you can hang everything on this, incomparable for tripod work

Supplied with overhead handle

Matte Box



For use with Digital SLR a simple rig mounting Matte Box which fits onto std 15mm twin rails 60mm apart adjustable for height

No provision for filters

Matte Box 2



Two independently rotating filter holders accepting $4'' \times 4''$ and $4'' \times 5.6''$ filters, two black masks provided so that $4'' \times 4''$ filters fit perfectly

Adjustable side wings and top wing Front 247mm × 158mm with attachable black mask 203mm × 115mm

140mm lens aperture with 4 different rubber baffles for snug lens fit to all lens sizes



Mounts on rig with L bracket for std twin 15mm rods 60mm apart, rig is hinged so you can swing it away from and onto lens

Serious bit of kit

Matte Box 3 For DSLR and all size Video Cameras

Two filter holders accepting 100mm square filters rear filter holders rotates 360 degrees for polarizers

Front $200 \text{mm} \times 120 \text{mm}$ with adjustable side wings and top wing



3 different rubber baffles to convert the 10mm dia. Iens aperture to a snug lens fit Mounts on std twin 15mm rods 60mm apart with 70mm height adjustment

KOOD Big lens support

Slides and fixes on twin 15mm dia. rails 60mm apart 50mm height adjustment Supports long lenses so there is no leverage pressure

on the lens bayonet and camera

KOOD Crab Clamp

Mounts any
device that has
English/Continental
male screw and
clamps a 15mm 30mm dia. rod or
other item Jaw
spread 44mm depth from centre of

KOOD Magic Arm

the V laws 15mm





18cm fixes to camera shoe or English male tripod thread, ball and two 55mm arm with 360 degree lockable and fixed joint, ends in ball with English male thread – the joint and ball ends all lock with the joint knob



KOOD L bracket



KOOD C Bracke



Fits std 15mm dia. rails 60mm apart for attaching over head carry handle etc – use with spare rail set

KOOD Over head handle – use with C bracket and twin 15mm spare rails

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KOOD Spare twin



KOOD Zoom gear belt and lever

KOOD Speed crank

For single finger operation on all follow





12" length for all Follow Focus devices from 01 – 04, click fit into centre of control knob provides control knob on a flexible cable

KOOD Flex Control 18" cable

KOOD Single rod clamp

With female tripod thread

OOD Sliding and lock camera plaiform



3cm height adjustment, 1/4 and 3/8 tripod threads and a 13 cm large sliding and lock camera plate and rails

KOOD Sliders

Super smooth with slight resistance for smoother controlled sliding by hand, far better than cranked without crank

Whole track can be mounted on a stand or tripod via central plate with English and Continental female threads



136 mm plate between axle centres wheels on both axles are 110mm apart, plate has angle calibration

4 x NBFS 60mm dia. Skate Wheels English male tripod screw



KOOD for wheel Dolly 2

 $190~\rm mm$ plate between axles – Metal plate $7\rm mm$ thick for extreme rigidity will take any weight

Wheels on both axles 177mm apart for good stability

4 x 74mm dia NDFS Skate Board Wheels 2 X 75mm x 8mm dia mounting towers included





KOOD 120cm Steady Camera Device

KOOD Single Spring Vest for 120cm fluid type contol over 15" (Steady Movement)

KOOD Single Spring Vest for 120cm fluid type control over 30" (for more rapid jerky movement as in running, reportage work)

KOOD Lightweight Steady Camera Device - designed for use without vest or springs





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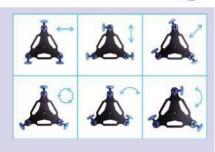
KOOD three wheel Dolly

Triangle base plate 24cm between axle centres

185 degree adjustment on each wheel so it can move from a straight line to a 360 degree spin

3 NBF 60mm dia. Skate Wheels English/Continental male item

Continued on next column.



KOOD

PHOTOGRAPHIC ACCESSORIES

Back Caps

Canon AF Canon FD M42 screw Sony/Min AF Sony NEX Minolta MD Nikon Olympus OM Olympus 4/3
Olympus m 4/3
Pentax K
Yashica/Contax



Body Caps

Canon AF M42 screv Sany/Min AF Sany NEX Minalta MD Nikon Olympus OM Olympus 4/3 Olympus M4/3 Pentax K Contax/Yashica

Camera – Lens Adopters

Can AF - M42 Can AF - Nikon Can FD - M42

Oly M4/3 - CAF Olym 4/3 - Can Af (With aperture ring) Oly M4/3 - Nikon Oly M4-3 - Nikon (With aperture ring)

Oly M43 - Leica M Sany/Min AF - MD Sony/Min AF - M42 Minolta MD - M42

Nikon – M42 Pentax K – M42 Sony NEX - Can AF Sony NEX - Son/Min AF Sony NEX - Nikon Al

Sany NEX – Nik Al and G Sany NEX – PK Yash/Con - M42

CM

Canon AF M42 Nikon Olympus OM T2 Thread Microscope adaptor



T2 Adopters

Can Af Con FD Nikon Olympus OM Olympus AF Olympus 4/3 Oly Micro 4/3 Sony/Min AF Minolta MD Pentax K



37mm 46mm 49mm 62mm

Reversing Rings

Can AF 52mm Can AF 58mm Can FD 52mm Yash/Cont 52mm M42 49mm M42 52mm M42 55mm M42 58mm Min MD 49mm Min MD 52mm Min MD 58mm

Nikon 58mm Praktica B 49mm Pentax K 49mm Pentax K 52mm Pentax K 55mm Pentax K 58mm

Camera Viewing accessories

screen Hoods Canon 50D Canon 350D Canon 450D Nikon D70 Nikon D80

Full shield magnifying Screen Hoods

Canon 550d/Nikon 500D Canon 60D/600D

Eye Cups Canon 550D type Nikon D300 type Fujica Nikon F type Praktica Prism Right Angle Viewer

Shutter Release Items

(CR with Locking Callar T) 10" Metal Cable Release 18" Metal Cable release 24" Metal Cable release 36" Metal Cable release 10" Vinyl Cable release 10" Vinyl Cable Release 20" Vinyl Cable release 36" Vinyl Cable release 20 ' Air release



Camera Care Items

mbo Hurricane Brush large Blower Brush um Blower Brush small Blower brush ipstick Lens Brush ens Tissues (Lens cloth) arge Micro Fibre (Lens cloth) Lens Cleaning Solution 4 Piece Cleaning set. 7 Piece Cleaning Set (in White Snap Box) 2 x Silica Gel 4 x Silica Gel 3 x Digital Screen Protect (Squeegee and cleaning) Contact Cleaning Pen Red Eve Pen

Camera Sling Strap

(Shock absorbing with Concealed Wire, tripod Bush attach) strap Double concealed wire strap Writ strap bush fitting

Comfort Straps

(Wide Neoprene, loose stitched Backing, reverse quick release Catches Makes hand strapl

Royal Blue For Canon For Nikon For Minolta For Minolta For Pentax



For Olympus 30mm-38mm Wide Straps

Plain Black embossed For Canon, embossed For Nikon, embossed For Minolta, embossed For Olympus, embossed For Pentax, embossed Hand Grip with Camera Platform Narrow black strap 25mm

Loop Fitting Strap

Metallic Neck Strap Metallic Wrist Strap

Rain Covers

Basic Rain Cove Large Medium Winter



Dark Room

16"x17" Changing Bag 27"x29" Changing Bag# 3"x45" Changing Bag# 10 piece Film Dev Kit 14 Piece film and print Dev Kit Dark Room Apron Straight Tank Therometer Angled Dish Therometer 2 XS/Steel film Clips 3 x Bamboo Print Tongs Print/film squeegee Univ Dev Tank 2 x Spirals 35mm Dev Tank Spare Univ Spiral
3 x 7"x10" Dev Trays
3 x 12"x10" Dev Trays
3 x 12"x16 Dev Trays
3 x 16"x20" Dev Trays 3 x 16"x20" Dev Trays 3 x 24"x20" Dev Trays

Graduated Beakers with Handle

Graduated H/Duty Measures

100cc 300cc

Safelights free standing Or wall fixing

Orange Red

Flash Accessories

Inverted cone attachment give soft daylight result for

Canon 420E) Canon 580FX Canon 380EX Nikon SB 900 Diffusers

Canon380EX Canon 420EX Canon 430EX Canon 540EX Canon 550EX Canon 580EX Nikon SB600 Nikon SB800 Nikon SB900

For v Pap up Flash Soft Flash Elasticated Cover Flash Brackets

Straight Flash Bracket Angle Flash Bracket Pro Bracket 1 Pro Bracket 2 Pro Bracket 3 Pro Bracket 5 Pro Bracket 5 Hot Shoe Co axial Hot shoe with lead Flash Slave Unit Flash Slave Unit with Sucker Flash Slave Nikon iTTL

Flash Leads Pc Pc

05m Straight 1m Straight 3m Straight 3m Straight 5m Straight 10m Straight 3m Coiled 5m Coiled



Flash Leads PC- two pin AC

0.5m straigh 1 m straight 2m straight 3m straight 5m straight

Film Items

SS Film Retrie Film Cement 100 x super 8 splicing tape uper 8 Tape Splice 35mm Plastic reloadable Film Cassette Opene Bulk Film Loader Attaché case 5 x 50 din mag Attaché Case up to 600 slide APS Film Case Daylight Slide Viewer 3 x Mag Slide Viewer 2 X Mag Slide Viewer Auto Slide Vewer 5"x4" Slide Sorter Box of 6 Acrylic Slide panels win 50 Din Mag Twin 50 CS Mag Hanimax Randel Mag Hanimax Straight Kodak Carousel c/w lid

Filter Accessories/Rings

2x Filter Wrench 48 - 58mm 2x Filter Wrench 62 - 77mm Folding Filt, Pouch 4 x - 86mm Folding Filt. Pouch 4 x - 67mm Folding Filt. Pouch 9 x - 86mm Folding Filt. Pouch 9 x - 67mm

25.5mm 28mm 30.5mm 35.5mm

37.5mm 40.5mm 43mm 46mm 48mm 49mm

55mm 58mm 62mm 62mm deep 67mm 72mm 72mm deep 77mm 82mm

127mm Filter Ring rotating c/w retainer

86mm

95mm

46mr 55mm 58mm 62mm 72mm 82mm 86mm

Collapsible rubber 43mm 46mm 49mm 52mm 58mm

72mm Wide Anale 52mm 58mm 62mm 67mm 72mm 77mm

Combi Two stage WA - Tele

55mm 58mm 62mm 72mm



Petal Hood Screw fit can be

52mm S8mm 67mm 72mm 77mm Metal

30mm 30.5mm 34mm 37mm 40.5mm 43mm 46mm 82mm

Snap Caps

27mm 28mm 30/30.5mm 34mm 37mm 40.5mm 43mm 46mm



49mm 52mm 55mm 58mm 62mm 67mm

77mm 82mm 86mm



58mm 62mm 67mm 72mm 77mm

White Balance Snap Caps

55mm 58mm 67mm 72mm 77mm 82mm



With draw string

75×110mm 90x140mm 90x200m

Zipped lid and filter compartment

Medium Large Extra Large

Shoe Fitting Spirit Levels

2 Way 2 Way for Sony 3 Bubble 3 Bubble for Sony



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Stepping Rings Stepping Ring 25-28mm Stepping Ring 25-30mm Stepping Ring 25-37mm Stepping Ring 27-28mm Stepping Ring 27-30mm Stepping Ring 27-37mm Stepping Ring 27-43mm Stepping Ring 27-46mm Stepping Ring 27-49mm Stepping Ring 27-52mm Stepping Ring 28-27mm Stepping Ring 28-30mm Stepping Ring 28-30.5mm Stepping Ring 28-35.5mm Stepping Ring 28-37mm Stepping Ring 30.5-25mm Stepping Ring 30.5-27mm Stepping Ring 30.5-28mm Stepping Ring 30.5-33mm Stepping Ring 30.5-35,5mm Stepping Ring 30.5-37mm

Stepping Ring 30.5-43mm Stepping Ring 30.5-46mm Stepping Ring 30.5-49mm Stepping Ring 30.5-52mm Stepping Ring 30-25mm Stepping Ring 30-28mm Stepping Ring 30-30.5mm Stepping Ring 30-33.5mm Stepping Ring 30-37mm Stepping Ring 30-43mm Stepping Ring 30-46mm Stepping Ring 30-49mm Stepping Ring 32.5-37mm Stepping Ring 34-37mm Stepping Ring 34-43mm Stepping Ring 34-46mm Stepping Ring 34-49mm Stepping Ring 35.5-37mm

Stepping Ring 35.5-49mm Stepping Ring 36-37mm Stepping Ring 37.5-37mm Stepping Ring 37.5-43mm Stepping Ring 37.5-46mm Stepping Ring 37.5-49mm Stepping Ring 37.5-52mm Stepping Ring 37-27mm Stepping Ring 37-28mm Stepping Ring 37-30mm Stepping Ring 37-30.5mm Stepping Ring 37-34mm Stepping Ring 37-35.5n Stepping Ring 37-37mm Stepping Ring 37-37.5mm Stepping Ring 37-40.5mm

Stepping Ring 37-42mm Stepping Ring 37-43mm Stepping Ring 37-46mm Stepping Ring 37-49mm Stepping Ring 37-52mm Stepping Ring 37-55mm Stepping Ring 37-58mm Stepping Ring 38.1-49mm

Stepping Ring 38, 1-52mm Stepping Ring 38.1-55mm Stepping Ring 38, 1-58mm Stepping Ring 39-46mm Stepping Ring 39-49mm Stepping Ring 39-52mm Stepping Ring 40.5-37mm Stepping Ring 40.5-43mm Stepping Ring 40.5-46mm Stepping Ring 40.5-48mm Stepping Ring 40.5-49mm Stepping Ring 40.5-52mm Stepping Ring 43-34mm Stepping Ring 43-37mm Stepping Ring 43-39mm

Stepping Ring 43-46mm Stepping Ring 43-49mm Stepping Ring 43-52mm Stepping Ring 43-58mm

Stepping Ring 43-62mm Stepping Ring 46-37mm Stepping Ring 46-43mm Stepping Ring 46-48mm Stepping Ring 46-49mm Stepping Ring 46-52mm Stepping Ring 46-55mm Stepping Ring 46-58mm Stepping Ring 46-62mm Stepping Ring 46-67mm Stepping Ring 48-43mm Stepping Ring 48-46mm Stepping Ring 48-49mm Stepping Ring 48-52mm Stepping Ring 48-55mm Stepping Ring 48-58mm Stepping Ring 48-69mm Stepping Ring 49-34mm Stepping Ring 49-37mm Stepping Ring 49-39mm Stepping Ring 49-43mm Stepping Ring 49-46mm Stepping Ring 49-48mm Stepping Ring 49-52mm Stepping Ring 49-55mm Stepping Ring 49-58mm Stepping Ring 49-62mm epping Ring 49-67mm Stepping Ring 49-72mm Stepping Ring 49-77mm Stepping Ring 50-49mm Stepping Ring 50-52mm Stepping Ring 50-55mm Stepping Ring 50-58mm Stepping Ring 52-37mm Stepping Ring 52-43mm Stepping Ring 52-46mm Stepping Ring 52-48mm Stepping Ring 52-49mm Stepping Ring 52-55mm Stepping Ring 52-58mm Stepping Ring 52-62mm Stepping Ring 52-67mm Stepping Ring 52-72mm Stepping Ring 52-77mm Stepping Ring 55-37mm Stepping Ring 55-46mm Stepping Ring 55-48mm Stepping Ring 55-49mm Stepping Ring 55-52mm Stepping Ring 55-58mm Stepping Ring 55-62mm Stepping Ring 55-67mm Stepping Ring 55-72mm Stepping Ring 55-77mm Stepping Ring 58-37mm Stepping Ring 58-46mm Stepping Ring 58-48mm Stepping Ring 58-49mm Stepping Ring 58-52mm Stepping Ring 58-55mm Stepping Ring 58-62mm tepping Ring 58-67mm Stepping Ring 58-72mm Stepping Ring 58-77mm Stepping Ring 60-62mm Stepping Ring 62-46mm Stepping Ring 62-49mm Stepping Ring 62-52mm Stepping Ring 62-55mm Stepping Ring 62-58mm Stepping Ring 62-67mm Stepping Ring 62-72mm Stepping Ring 62-77mm Stepping Ring 67-52mm Stepping Ring 67-55mm Stepping Ring 67-58mm Stepping Ring 67-62mm Stepping Ring 67-72mm

Stepping Ring 67-77mm

Stepping Ring 67-82mm

Stepping Ring 69-52mm

Stepping Ring 69-62mm

Stepping Ring 69-67mm

Stepping Ring 69-72mm

Stepping Ring 69-77mm

Stepping Ring 72-52mm

Stepping Ring 72-58mm Stepping Ring 72-62mm Stepping Ring 72-67mm Stepping Ring 72-77mm Stepping Ring 72-82mm Stepping Ring 72-86mm Stepping Ring 72-95mm Stepping Ring 77-52mm Stepping Ring 77-58mm Stepping Ring 77-62mm Stepping Ring 77-67mm Stepping Ring 77-72mm Stepping Ring 77-82mm Stepping Ring 82-67mm Stepping Ring 82-72mm Stepping Ring 82-77mm Stepping Ring 82-86mm Stepping Ring 86-82mm Hasselblad Adapter B50-52 Hasselblad Adapter BSO-55 Hasselblad Adapter B50-58 Hasselblad Adapter B50-67 Hasselblad Adapter B60-58 Hasselblad Adapter B60-62 Hasselblad Adapter B70-72 Rollei Adapter 66-67mm Rollei Adapter 66-72mm

Scrapbook 3L

OOx Adhesive dots small 100x Adhesive dots Medium 100x Adhesive Dots Large 500 x White Mounting Squares 250 X Clear Mounting Corners 250 x Reg 32mm M, Corners 250 x 32mmMax View M, Coners 100 x 75mm Mounting Corners 100 x 75mm Max view M. COrners 25m Double Sided Tape 6m Super High Tack tape 250 x 10mm Clear Photo Corners 500 x 10mm Clear Photo Corners 250 x Photo Fix 500 x Photo Fix 3 x A4c Self laminating Cards 3 x A5 Self Laminating Cards 3 x 150 x 100mm S, Lam Cards

10m Eazy Runner Per adhesive Easy Mini Dots dispenser 107cm Reflector 20cm Cube Light

50cm Cube Light 80cm Reflector 80cm Reflector Silver Glass 90cm Cube Light 92x122 Reflector (5 in 1) Universal Umbrella Bracket Black/Gold Studio Umbrella 24° Black/Gold Studio Umbrella 33' Black/Gold Studio Umbrella 36° Black/Gold Studio Umbrella 40° Black/Gold Studio Umbrella 43' Black/Gold Studio Umbrella 47' Black/Gold Studio Umbrella 51" Black/Silver Studio Umbrella 24" Black/Silver Studio Umbrella 33 Black/Silver Studio Umbrella 36

Black/Silver Studio Umbrella 40° Black/Silver Studio Umbrella 43' Black/Silver Studio Umbrella 47' Black/Silver Studio Umbrella 51° Black/White Studio Umbrella 24' Black/White Studio Umbrella 33 Black/White Studio Umbrella 36° Black/White Studio Umbrella 40° Black/White Studio Umbrella 43° Black/White Studio Umbrella 47 Black/White Studio Umbrella 51° Silver/Glass Studio Umbrella 24° Silver/Glass Studio Umbrella 33° Silver/Glass Studio Umbrella 36° Silver/Glass Studio Umbrella 40° Soft White Studio Umbrella 24° Soft White Studio Umbrella 33' Soft White Studio Umbrella 36 Soft White Studio Umbrella 40' Soft White Studio Umbrella 43° Soft White Studio Umbrella 47 Soft White Studio Umbrella 51° Studio Background Stand Kit

Tripods and Ball Heads

Tripod Bushes Eng.- Cont

Pro Tripods with long and short col, 3 step leg splay, bag hook, case Shoulder strap

28mm Alloy 4 section 22mm 4 Section Carbon Fibre 28mm 4 Section Carbon Fibre 32mm 4 Section Carbon Fibre Spare Tool Kit

Pro Monopods 4 section

28mm Allon 22mm Carbon Fibre 28mm Carbon Fibre 32mm Carbon Fibre

Light weight Alloy with pan tilt, spirit level Geared centre col. Plus case

23mm three section 26mm three section

Ball and Socket Heads

24mm series 0 30mm series 0 36mm series 0 36mm series 1 44mm series | 54mm series 36mm series 2 44mm series 2 54mm series 2 36mm series 3 44mm series 3 54mm series 3 105mm 3 Way

120mm 3 Way

Std BS Large Std BS small QR Plate 1 QR Plate 2 QR Plate 3 QR Plate 4 QR Plate 5

QR Plate 6 QR Plate 7 for L/Alloy



Flexible Grip Pods

Small Medium Large Wire Flexi Pod G Clamp with ball head

60cm, 80cm, 100cm, 120cm

Skate Wheeled Dollys

KOOD DSLR Rigs

K Rig b1

K Rig 2 K Rig 3

K Rig 4

KOOD Stead Cam

Vest and Arm 1

K Small 4 wheels K Big 4 Wheels 2 x stands K Big 3 Wheels K 2 x Dolly Stands

Follow Focus Devices

O for rods/QR Clamp, Lens Gear Belt 1 for rods, lens gear belt 2 for Camera, L Mount, Lens Gear Belt 3 Rods, Hard Stoppers, Lens Gear Belt 4 for Rods Hard Stopper Quick release. Lens Gear Belt

Support Items

7" Aim 11°m Arm Rod Clamp Super crab Clamp Speed crank for FO-4 12" Whip 18" Whip Large Lens Support LENS Gear Belt Zoom Lever Gear Ring 18mm Connectors and Rods fr Rig 1 C Arm and Top Handle Platform with 40cm Rods

Complete Rigs

Rig 1 with Top Handle Rig 2 With Top | Handle Rig 3 F/Focus 4, KM2,

Lconnector

Z Connector

Crank, Whip and case Rig 4, KF3, KM3

Cage set connector 2, Rods, Top Handle KF 1, KM1

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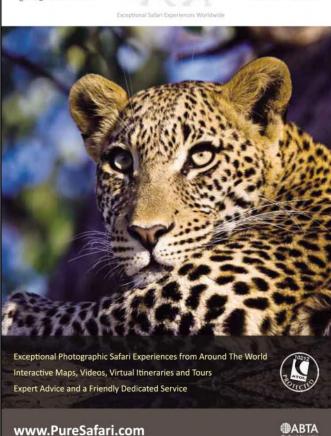
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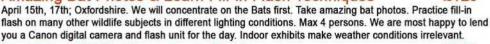


Golden Eagle Experience in Leicestershire 2015 Dates April 19th, May 17th; Golden Eagle will fly, and perch in carefully chosen natural settings. Jesses hidden for

static shots. Controlled flying. Also selection from, Owls, Buzzard, Hawks, Goshawk Max. 8 photographers. Cheetahs, Lions, Foxes, Birds of Prey, Cambs.

April 18th, June 28th; Privileged access to Cheetahs, Bengal Tiger, White Tiger & Corsac Foxes. The Cheetah & Tiger enclosures are not mowed for enhanced photographic opportunities. Private Displays by various Birds of Prey, both static & flying. Jesses hidden for static shots. New Cheetah Cubs for 2015





Big Cats at WHF, Smarden in Kent
March 21st, 28th. April 11th, May 9th; Up close to African Lions, Bengal + Siberian + Sumatran Tigers, Serval, Cheetah, Pumas, Jungle Cat, Amur & Snow Leopards, Black Leopards, Clouded Leopards, Fishing Cat. Large open enclosures. UK's most popular photo workshop. Really special photo opportunities from just inches away. Two sets of Lion Cubs born July & August 2013. Huge natural enclosure. Max 12 clients.

Big Cats at WHF, Smarden in Kent

 Specialist event for just 6 photographers - includes Jaguar April 8th, 9th, 10th; Full day as above, but with additional space at each enclosure. Time is also put aside to

review your photos at lunchtime. One to one tuition throughout this very special day. You wil see all the animals as above and you will have more personal interaction with the cats. Now including Jaguar.

Gift Vouchers available for any Workshop or for any Monetary Value. These Experiences make Wonderful Gifts for that Special Occasion.

Gorillas & African Safari Experience, Port Lympne

March 22nd, May 3, 10, 31st; 3 gorilla sessions. No wires, fences or bars throughout the day. Clean backgrounds plus Privileged Access. Photograph at eye level over moat. Huge male silverbacks + family group. Private VIP Safari for 2.5 hours. Rhinos, Wildebeest, Eland, Zebras, Giraffes, Buffalo, Ostriches, Deer.

Birds of Prey Workshop, Bedford

April 25th, 26th; Private flying displays on pre-determined flightpath helps you to focus on birds in flight. Excellent opportunities with carefully chosen backgrounds. Also static shots in outstanding wooded locations. Jesses carefully hidden. This location boasts one of the largest collections of Birds of Prey in the UK. White tailed Sea Eagle, Bald Eagles, Hawks, Owls, Falcons, Kestrels, Buzzards and Long Eared Owl (new)

Foxes, Otters, Wildcats, Badgers & more, Surrey.

July 6th, 7th, 8th; Inside enclosures 'til sunset. Also Owls, Snakes, Badgers, Polecats, Weasels, Hedgehog, Harvest Mice & various Deer. This is possibly Englands longest established photographic venue. 2 sessions with the foxes, sometimes only inches away from you. Time is spent inside encloses with Foxes, Otters & Scottish Wildcats. Badgers GUARANTEED. No fences or wires to shoot through for any subject today.

Small Cats Workshop, Welwyn, Herts.

April 22, 23rd; Privileged access to Snow Leopards, Amur Leopards, Pumas, Caracal, Leopard Cat, Lynx, Servals, Golden Cat. As featured on recent series of TV programs on Animal Planet. Small groups. Tuition

Bass Rock Gannets

June 5, 7, 11, 21st; Private boat. Exclusive use of island for just 10 photographers. 50,000 pairs of nesting gannets on one small island. 4.5 hours photography. Amazing close-ups & fantastic flight shots. Large crate of fish fed to gannets as they dive into the sea. An amazing sight that you will never forget.

Gannets diving off Bass Rock

June 19th; Fantastic new workshop for 2014. We sail round Bass Rock without landing on the island. A whole hour of throwing fish into the sea for the Gannets to catch. Amazing diving shots. 1,000 + dives. Tuition. Farne Islands Puffins (Over 5 hrs photography)

June 6th, 10th, 17th, 20th; 20 species of birds. 50,000 puffins. Guillemots, Razorbills, Shag, Arctic Tern colony etc. You will get unbelievably close to some of the species. Get that much sought after shot of Puffins with their beaks crammed full of sand eels. Tips and Tuition. Approximately 5 hours photography.

Pro Birds of Prey Shoot, Bamburgh, Northumberland.

June 13th, 14th; Amazing photography opportunities. Hill top views overlooking large extensive valleys and seascapes. Rocks and gorse bushes abound. Golden Eagle, Peregrine Falcon, Snowy Owl, Eagle Owl and Barn Owl will be placed in really natural situations. Jesses will be hidden where possible for those perfect "in the wild" shots. Can combine with Bass/Farne as this location is very close to the Farne Islands.

Pro Birds of Prey Shoot (2), Bamburgh, Northumberland.

June 4th, 8th, 12th, 16th; New venue. Both the falconer and the birds are different to workshop above. Venues are about 20 miles apart. We will take two of the birds down to an amazingly beautiful, little known waterfall. This will provide a unique backdrop for your subjects. The falls are surrounded by trees covered with mosses and lichens. We will photograph up to 10 different species, mainly British. Maximum 8 photographers.



















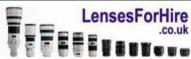
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one flash trigger control several flash trigger and flash



one flash trigger control several flash trigger and studio flash



one flash trigger control several flash trigger and camera



one flash trigger control several camera and flash

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Adapter Rings

EF-EOS M Mount Adapter EF-NEX Mount Adapter JY-43F Mount Adapter



Extension Tubes

DG-C Automatic Extension Tube set DG-N Automatic Extension Tube set DG-M43 Automatic Extension Tube set DG-NEX Automatic Extension Tube set DG-FU Automatic Extension Tube set

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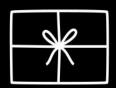
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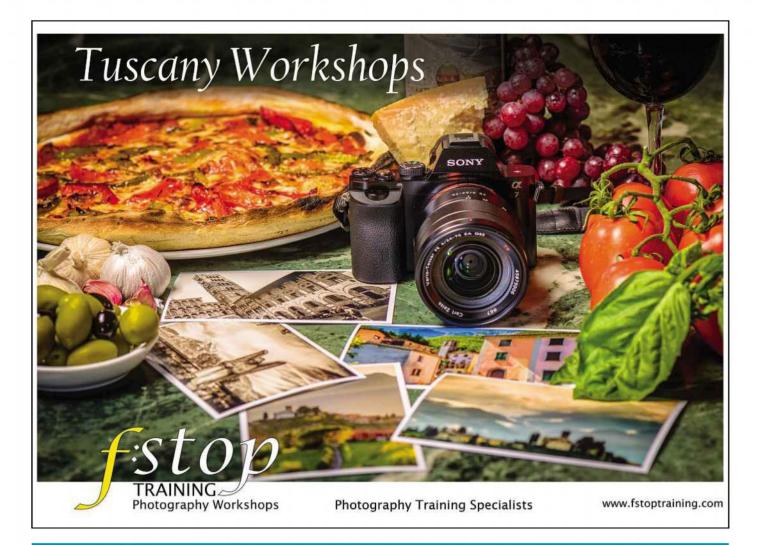




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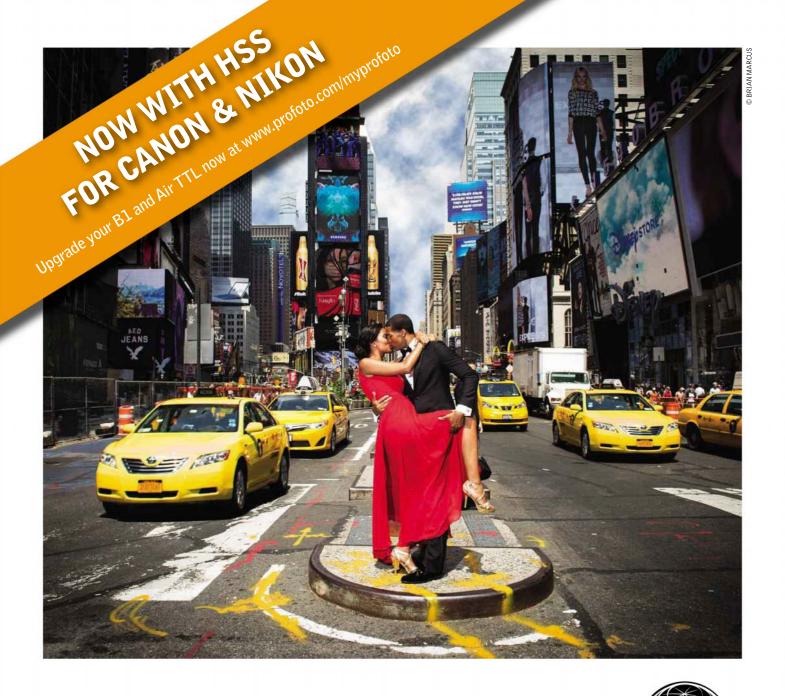
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